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Phytoplankton Productivity Experiments and Nutrient Measurements in Ungava Bay NWT from August 1 to September 3,1979

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January 1982

Canadian Data Report of Fisheries and Aquatic Sciences No. 287

2008-03589/

Canadian Data Report of Fisheries and Aquatic Sciences

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Canadian Data Report

Fisheries and Aquatic Sciences No. 287

PHYTOPLANKTON PRODUCTIVITY EXPERIMENTS AND NUTRIENT MEASUREMENTS IN UNGAVA BAY NWT FROM AUGUST 1 TO SEPTEMBER 3, 1979

by

B. Irwin, T. Platt, W.G. Harrison, C.L. Gallegos and P. Lindley

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This is the twelfth Data Report from the Marine Ecology Laboratory, Dartmouth.

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Cat. No. Fs 97-13/287 ISSN 0706-6465

Correct citation for this publication:

Irwin, B., T. Platt, W.G. Harrison, C.L. Gallegos and P. Lindley. 1982. Phytoplankton productivity experiments and nutrient measurements in Ungava Bay NWT from August 1 to September 3, 1979. Can. Data Rept. Fish. Aquat. Sci. No. 287: 208 p.

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Abstract

IRWIN, B., T. PLATT, W.G. HARRISON, C.L. GALLEGOS and P. LINDLEY. 1982. Phytoplankton productivity experiments and nutrient measurements in Ungava Bay NWT from August 1 to September 3, 1979. Can. Data Rept. Fish. Aquat. Sci. No. 287: 208 p.

During the period of August 1 to September 3, 1979 a series of primary productivity experiments was conducted on board CSS Baffin in Ungava Bay, NWT. Samples were collected every 4 hours around the clock, Corresponding nutrient and physical parameters were measured in the same samples. In this report both the raw data and the fitted light saturation parameters, with confidence limits, are presented.

Resume

IRWIN, B., T. PLATT, W.G. HARRISON, C.L. GALLEGOS and P. LINDLEY. 1982. Phytoplankton productivity experiments and nutrient measurements in Ungava Bay NWT from August 1 to September 3, 1979. Can. Data Rept. Fish. Aquat. Sci. No. 287: 208 p.

Pendant la période du 1er août au 3 septembre 1979 une série d'expériences de productivité primaire ont été effectuées à bord du CSS Baffin dans la baie d'Ungava (T.N.-O.). Des échantillons ont été prélevés toutes les 4 heures pendant toute la période. Les éléments nutritifs et les paramètres physiques correspondants ont été mesurés sur les mêmes échantillons. Le présent rapport contient les données brutes et les paramètres lissés de saturation lumineuse, avec les niveaux de confiance.

Introduction

This is the fifth in a series of data reports giving the results of experiments on photosynthetic production versus light intensity for natural phytoplankton populations in the North Atlantic and adjacent waters north of 50°N. Samples were collected from CSS Baffin during a cruise in Ungava Bay, N.W.T. over a period from August 1, 1979 to September 3, 1979. This was a joint cruise with the Hydrographic Division, Ocean and Aquatic Sciences, Atlantic.

Sampling

Water samples for light saturation experiments, nutrient and biomass determinations were collected from one depth with a 30 litre Niskin bottle at a total of 86 stations. The majority (82) of the samples were taken from 10 m. At two stations vertical profiles were taken from 30 m to the surface for salinity, nutrient and temperature measurements. At daylight stations secchi disc readings were taken, and vertical plankton net tows (mesh size 20μ) were done at 24 stations. Station locations are shown in Fig. 1.

Methods

PRODUCTIVITY

Primary production was measured using the ^{14}C method as described in Strickland and Parsons (1972). For each light saturation experiment, 7 litres of sample was innoculated with sodium bicarbonate ^{14}C solution to yield an approximate activity of 5 μci per 100 ml of sample. Each of sixty light and four dark bottles was filled with a 100 ml aliquot of innoculated sample water and placed in a temperature controlled incubator (Irwin et al. 1982,

Fig. 2B). Illumination in the incubators was provided by a 2000 w tungsten-halogen lamp (New Haline OHS 2000) having a maximum light intensity of approximately 1000 Wm^{-2} (photosynthetically active radiation - PAR).

Temperature control was achieved by continuously pumping sea water from 3 m through the incubator.

For eighty of the experiments, incubations were terminated after 2 hours. In two experiments a time series was run with one quarter of the light bottles and one dark bottle being removed after 1/2, 1, 2 and 4 hr periods. All samples were immediately filtered onto 2.5 cm diameter membrane filters (Millipore) having a pore size of 0.45 μ and stored frozen in a dessicator at -20°C. The filters were later thawed in the lab, exposed to HCl fumes, and counted in a liquid Scintillation Counter.

CHLOROPHYLL *A*

Replicate one litre samples were filtered onto 5.5 cm glass fibre (GF/C) filters and stored frozen at -20°C in a dessicator. Chlorophyll *a* and phaeophytin measurements were made using the fluorometric technique of Yentsch and Menzel (1963) as modified by Holm-Hansen et al. (1965). Acetone extracts of pure chlorophyll *a* (Sigma Chemical Co.) were used to calibrate the fluorometer.

INCUBATION LIGHT INTENSITY

Photosynthetically active radiation (PAR) was measured at each bottle position using a Licor Li 185A Quantum meter fitted with a 190S underwater quantum sensor.

NUTRIENTS

Four inorganic nutrients were routinely measured from each sample. Three separate aliquots of filtered sample water were frozen at -20°C and stored on board. All analyses were carried out later in the laboratory using the following methods:

Nitrate - industrial method 155-71W (Technicon)

Silicate - industrial method 158-71W (Technicon)

Phosphate was measured using the Murphy and Riley (1962) single solution method and ammonia was measured by the phenolhypochlorite method of Solorzano (1969).

CELL COUNTS

Approximately 500 ml of sample water was preserved with 2 ml Lugols solution for species identifications and enumeration.

NUCLEIC ACIDS

Replicate 1 litre samples were filtered onto 5.5 cm glass fibre filters (Reave Angel 934H) and stored at -20°C in a desiccator. The frozen filters were homogenized in buffered sodium chloride solution at 0°C and then centrifuged. The clear supernatant was transferred to a test tube and an equal volume of the dye Ethidium Bromide was added with vigorous mixing. The fluorescence of this mixture was measured on a Model III Turner fluorometer (Excitation filter Corning 7-60, Emission filter Wratten 23A). This was a measure of Ribonucleic acid (RNA) and Deoxyribonucleic acid (DNA). RNAse solution, 0.04 ml, was added to the test tube, mixed and incubated at

50°C for 60 min. The fluorescence was remeasured. This second reading was a measure of DNA concentration only.

PROTEINS

Replicate 500 ml samples were filtered onto previously baked 2.4 cm glass fibre filters (Whatman GF/C) and stored at -20°C in a desiccator. A fluorometric method based on the fluorescamine reaction described by Packard and Dortch (1975) was used to estimate particulate protein. The frozen filter was transferred to a grinding tube and 5.0 ml of 1% Triton X-100 (Sigma Chemical Co.) solution was added. The filter was homogenized for 60 seconds and homogenate transferred to a 10 ml centrifuge tube. The glass fibres were centrifuged down at 2000 rpm for 5 minutes, 1.0 ml of the clear supernatant was pipetted into a 50 ml boiling tube, containing 3.0 ml of borate buffer, and finally 1.0 ml of Fluram (4 phenylspiro[Furan-2(3H), 1'-phthalan]-3,3 dione) was added dropwise with vigorous mixing. After 5 minutes, the fluorescence was measured on a Turner III fluorometer (Excitation filter Corning 7-60, emission filters Wratten 2A and 48). The method was standardized with solutions of Bovine Serum Albumen.

ADENOSINE TRIPHOSPHATE (ATP)

Replicate 100 ml samples were filtered onto previously baked 2.4 cm glass fibre filters (Whatman GF/C) and immediately placed into 10 ml test tubes containing 5 ml of boiling tris buffer. After 3 minutes the tubes were cooled to room temperature then stored at -20°C. ATP concentrations were estimated using the technique described in Strickland and Parsons (1972) using an SAI Model 2000 integrating photometer.

PARTICULATE CARBON

Replicate 500 ml samples were filtered onto previously baked 2.4 cm glass fibre filters (Whatman GF/C) and sucked dry. Filters were then folded, placed in aluminum foil wrappers, and stored at -20°C. Filters were freeze dried overnight before combustion in a Hewlett-Packard Model 185B CHN analyzer.

Estimation of Photosynthetic Parameters

Measurements of specific production, P^B, and irradiance, I, were used to estimate parameters in the equation of Platt et al. 1981,

$$P^B = P_s (1 - e^{-\alpha I/P_s}) e^{-\beta I/P_s} \quad (1)$$

P_s (mg C mg Chl^{-1} h^{-1}) is the light-saturated rate of specific production in the absence of photo-inhibition, α(mg C [mg Chl]$^{-1}$ h^{-1} W^{-1} m^2) is the initial slope of the P-I curve, and β (same units as α) is a parameter that characterizes the photo-inhibition. All three parameters were estimated simultaneously using the modified Gauss-Newton method (Bard 1974). The method requires initial or trial estimates of the parameters, which were obtained as follows. The initial slope, α, was estimated by a linear regression of those points with $I \leq 25$ W m^{-2}. P_s was estimated as the highest observed value of P^B, and β was initially set to 10^{-5}. All three parameters were then fitted simultaneously.

A complete discussion of the mathematical basis for this technique of parameter estimation is given in Irwin et al. (1980).

Acknowledgements

We wish to thank Mark Hodgson, Paul Dickie, Leslie Harris, Stella Sirois, Jill Gibbons and Anne Marie Burzynski for their technical assistance on the cruise and in the laboratory. We also wish to thank Dave Rudderham for his assistance in the calculation of the light saturation parameters.

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Table Legend

I = Light intensity(PAR):watts m^{-2}

P = Specific production:mg C(mg Chl a)$^{-1}h^{-1}$

LIGHT SATURATION PARAMETERS AND CONFIDENCE INTERVALS

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	4.792	4.039	5.545
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.073	0.061	0.085
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.006	-0.0013	0.0025

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.859 x 10	3.742×10^2	-1.272×10^4	
$(\alpha - \hat{\alpha})$	-	9.341×10^3	-7.317×10^4	
$(\beta - \hat{\beta})$	-	-	2.493×10^6	2.328

SUM OF SQUARED ERRORS: 1.284 x 10

NO. OF POINTS: 50

α mg C(mg Chl a) $^{-1}$ h^{-1}/W^{-2}	0.097	0.086	0.108
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0011	-0.0011	0.0032

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.638 x 10	4.057×10^2	-1.136×10^4	
$(\alpha - \hat{\alpha})$	-	1.216×10^4	-8.202×10^4	
$(\beta - \hat{\beta})$	-	-	2.223×10^6	2.308

SUM OF SQUARED ERRORS: 1.273 x 10 NO. OF POINTS: 50

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	1.767	1.607	1.927
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.039	0.034	0.044
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0004	0.0005

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.232 x 10	2.711×10^2	-1.380×10^4	
$(\alpha - \hat{\alpha})$	-	5.014×10^3	-3.658×10^4	
$(\beta - \hat{\beta})$	-	-	2.662×10^6	0.218

SUM OF SQUARED ERRORS: 1.310

NO. OF POINTS: 54

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.075	0.067	0.083
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0005	-0.0005	0.0014

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.167×10	2.863×10^2	-1.233×10^4	
$(\alpha - \hat{\alpha})$	-	5.635×10^3	-4.155×10^4	
$(\beta - \hat{\beta})$	-	-	2.091×10^6	0.703

SUM OF SQUARED ERRORS: 4.210

NO. OF POINTS: 54

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.715	3.336	4.095
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.124	0.104	0.143
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0007	-0.0005	0.0019

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.147 x 10	1.568×10^2	-1.061×10^4	
$(\alpha - \hat{\alpha})$	-	1.977×10^3	-1.369×10^4	
$(\beta - \hat{\beta})$	-	-	1.744×10^6	1.580

SUM OF SQUARED ERRORS: 8.719

NO. OF POINTS: 50

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.117	0.099	0.135
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0001	-0.0010	0.0012

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.407 x 10	1.856×10^2	-1.260×10^4	
$(\alpha - \hat{\alpha})$	-	2.428×10^3	-1.683×10^4	
$(\beta - \hat{\beta})$	-	-	2.201×10^6	1.526

SUM OF SQUARED ERRORS: 9.318

NO. OF POINTS: 55

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.136	2.849	3.423
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.098	0.085	0.112
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0009	0.0009

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.075 x 10	1.860×10^2	-9.988×10^3	
$(\alpha - \hat{\alpha})$	-	2.436×10^3	-1.791×10^4	
$(\beta - \hat{\beta})$	-	-	1.634×10^6	0.918

SUM OF SQUARED ERRORS: 5.175

NO. OF POINTS: 51

α mg C(mg Chl a) h^{-1}/W^{-2}	0.099	0.082	0.116
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0013	0.0013

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.389 x 10	2.315×10^2	-1.296×10^4	
$(\alpha - \hat{\alpha})$	-	3.443×10^3	-2.641×10^4	
$(\beta - \hat{\beta})$	-	-	2.275×10^6	1.970

SUM OF SQUARED ERRORS: 1.202 x 10

NO. OF POINTS: 55

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	5.151	4.582	5.720
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.091	0.080	0.101
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0004	-0.0011	0.0019

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.931 x 10	3.504×10^2	-1.259×10^4	
$(\alpha - \hat{\alpha})$	-	8.988×10^3	-5.850×10^4	
$(\beta - \hat{\beta})$	-	-	2.405×10^6	1.666

SUM OF SQUARED ERRORS: 1.036 x 10 NO. OF POINTS: 56

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.089	0.077	0.100
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0016	0.0001	0.0032

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.940 x 10	2.771×10^2	-1.107×10^4	
$(\alpha - \hat{\alpha})$	-	6.121×10^3	-3.729×10^4	
$(\beta - \hat{\beta})$	-	-	1.871×10^6	1.483

SUM OF SQUARED ERRORS: 8.705 NO. OF POINTS: 53

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.903	2.596	3.209
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.073	0.062	0.085
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0006	-0.0003	0.0016

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.272 x 10	2.506 x 10^2	-1.168 x 10^4	
$(\alpha - \hat{\alpha})$	-	3.888 x 10^3	-2.925 x 10^4	
$(\beta - \hat{\beta})$	-		1.938 x 10^6	0.957

SUM OF SQUARED ERRORS: 5.729

NO. OF POINTS: 54

α mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	0.038	0.031	0.008
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0017	0.007	0.0028

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.127 x 10	2.794×10^2	-1.005×10^4	
$(\alpha - \hat{\alpha})$	-	4.819×10^3	-3.380×10^4	
$(\beta - \hat{\beta})$	-	-	1.417×10^6	0.515

SUM OF SQUARED ERRORS: 3.146 NO. OF POINTS: 55

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.588	3.133	4.042
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.080	0.068	0.092
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0016	0.0001	0.0032

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.232 x 10	2.819×10^2	-1.088×10^4	
$(\alpha - \hat{\alpha})$	-	4.970×10^3	-3.539×10^4	
$(\beta - \hat{\beta})$	-	-	1.559×10^6	1.260

SUM OF SQUARED ERRORS: 7.841

NO. OF POINTS: 56

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.92	0.079	0.104
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0011	0.0011

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.205 x 10	2.605×10^2	-1.216×10^4	
$(\alpha - \hat{\alpha})$	-	4.401×10^3	-3.211×10^4	
$(\beta - \hat{\beta})$	-	-	2.125×10^6	1.299

SUM OF SQUARED ERRORS: 7.931

NO. OF POINTS: 55

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	4.164	3.812	4.516
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.083	0.075	0.090
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0009	0.0009

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.887 x 10	3.029×10^2	-1.239×10^4	
$(\alpha - \hat{\alpha})$	-	6.902×10^3	-4.472×10^4	
$(\beta - \hat{\beta})$	-	-	2.484×10^6	0.768

SUM OF SQUARED ERRORS: 4.600

NO. OF POINTS: 54

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.065	0.060	0.070
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0090	0.0039	0.0141

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.023 x 10	4.904×10^2	-5.410×10^3	
$(\alpha - \hat{\alpha})$	-	2.478×10^4	-1.024×10^5	
$(\beta - \hat{\beta})$	-	-	7.363×10^5	0.905

SUM OF SQUARED ERRORS: 5.526

NO. OF POINTS: 55

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.501	2.970	4.032
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.053	0.047	0.058
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0031	0.0013	0.0049

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.318 x 10	3.146×10^2	-6.905×10^3	
$(\alpha - \hat{\alpha})$	-	1.084×10^4	-5.052×10^4	
$(\beta - \hat{\beta})$	-	-	9.904×10^5	0.576

SUM OF SQUARED ERRORS: 3.318

NO. OF POINTS: 52

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	[illegible]	[illegible]	[illegible]
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0006	-0.0003	0.0014

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.160 x 10	3.086×10^2	-1.280×10^4	
$(\alpha - \hat{\alpha})$	-	6.601×10^3	-4.501×10^4	
$(\beta - \hat{\beta})$	-	-	2.308×10^6	0.719

SUM OF SQUARED ERRORS: 4.646 x 10 NO. OF POINTS: 58

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.101	2.844	3.358
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.078	0.068	0.087
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.000	-0.0007	0.0007

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.112×10	2.334×10^2	-1.208×10^4	
$(\alpha - \hat{\alpha})$	-	3.883×10^3	-2.834×10^4	
$(\beta - \hat{\beta})$	-	-	2.330×10^6	0.751

SUM OF SQUARED ERRORS: 4.490

NO. OF POINTS: 54

α mg C(mg Chl a) [illegible]	0.003	0.072	0.098
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0011	-0.0005	0.0027

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.121 x 10	2.566×10^2	-1.080×10^4	
$(\alpha - \hat{\alpha})$	-	4.674×10^3	-3.115×10^4	
$(\beta - \hat{\beta})$	-	-	1.643×10^6	1.407

SUM OF SQUARED ERRORS: 8.589

NO. OF POINTS: 55

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	4.615	4.028	5.202
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.071	0.064	0.079
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0015	-0.0002	0.0032

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.562 x 10	3.423×10^2	-9.602×10^3	
$(\alpha - \hat{\alpha})$	-	1.085×10^4	-6.088×10^4	
$(\beta - \hat{\beta})$	-	-	1.643×10^6	0.973

SUM OF SQUARED ERRORS: 5.714

NO. OF POINTS: 53

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.065	0.058	0.072
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0012	-0.0004	0.0028

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.638 x 10	4.175×10^2	-9.961×10^3	
$(\alpha - \hat{\alpha})$	-	1.222×10^4	-7.880×10^4	
$(\beta - \hat{\beta})$	-	-	1.703×10^6	1.011

SUM OF SQUARED ERRORS: 6.054 NO. OF POINTS: 54

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.864	2.629	3.299
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.069	0.058	0.079
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0002	-0.0008	0.0011

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.388 x 10	2.569×10^2	-1.430×10^4	
$(\alpha - \hat{\alpha})$	-	4.661×10^3	-3.331×10^4	
$(\beta - \hat{\beta})$	-	-	2.657×10^6	1.051

SUM OF SQUARED ERRORS: 6.665

NO. OF POINTS: 57

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.087	0.076	0.097
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0012	-0.0002	0.0026

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.815 x 10	2.700×10^2	-1.001×10^4	
$(\alpha - \hat{\alpha})$	-	5.904×10^3	-3.605×10^4	
$(\beta - \hat{\beta})$	-	-	1.649×10^6	1.121

SUM OF SQUARED ERRORS: 6.579

NO. OF POINTS: 53

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.815	3.406	4.225
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.101	0.085	0.117
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0004	-0.0008	0.0015

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.327 x 10	2.246×10^2	-1.305×10^4	
$(\alpha - \hat{\alpha})$	-	3.525×10^3	-2.502×10^4	
$(\beta - \hat{\beta})$	-	-	2.355×10^6	1.740

SUM OF SQUARED ERRORS: 1.082 x 10 NO. OF POINTS: 56

α mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	0.070	0.062	0.090
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0017	0.0017

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.020 x 10	2.870×10^2	-1.217×10^4	
$(\alpha - \hat{\alpha})$	-	6.114×10^3	-4.102×10^4	
$(\beta - \hat{\beta})$	-	-	2.177×10^6	2.200

SUM OF SQUARED ERRORS: 1.317 x 10

NO. OF POINTS: 54

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.852	3.488	4.216
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.080	0.071	0.088
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0006	-0.0005	0.0017

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.615 x 10	2.884×10^2	-9.024×10^3	
$(\alpha - \hat{\alpha})$	-	6.024×10^3	-3.961×10^4	
$(\beta - \hat{\beta})$	-	-	1.561×10^6	0.723

SUM OF SQUARED ERRORS: 3.990

NO. OF POINTS: 50

α mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	0.064	0.057	0.070
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0002	-0.0005	0.0010

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.949 x 10	2.847×10^2	-1.167×10^4	
$(\alpha - \hat{\alpha})$	-	5.970×10^3	-4.108×10^4	
$(\beta - \hat{\beta})$	-	-	2.112×10^6	0.458

SUM OF SQUARED ERRORS: 2.688 NO. OF POINTS: 53

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.428	2.918	3.937
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.063	0.054	0.072
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0022	0.0004	0.0040

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.935 x 10	3.338×10^2	-9.592×10^3	
$(\alpha - \hat{\alpha})$	-	7.616×10^3	-4.833×10^4	
$(\beta - \hat{\beta})$	-	-	1.344×10^6	1.045

SUM OF SQUARED ERRORS: 6.625

NO. OF POINTS: 57

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.084	0.780	0.092
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0012	0.0003	0.0021

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.090 x 10	2.606×10^2	-1.097×10^4	
$(\alpha - \hat{\alpha})$	-	4.981×10^3	-3.265×10^4	
$(\beta - \hat{\beta})$	-	-	1.756×10^6	0.588

SUM OF SQUARED ERRORS: 3.662

NO. OF POINTS: 56

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.814	2.595	3.033
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.071	0.063	0.078
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0006	0.0006

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.118 x 10	2.368×10^2	-1.186×10^4	
$(\alpha - \hat{\alpha})$	-	3.991×10^3	-2.813×10^4	
$(\beta - \hat{\beta})$	-	-	2.131×10^6	0.442

SUM OF SQUARED ERRORS: 2.646

NO. OF POINTS: 54

α mg C(mg Chl a) [illegible]	0.050	0.043	0.058
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0002	-0.0006	0.0010

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.807 x 10	2.452×10^2	-1.015×10^4	
$(\alpha - \hat{\alpha})$	-	4.733×10^3	-3.174×10^4	
$(\beta - \hat{\beta})$	-	-	1.754×10^6	0.469

SUM OF SQUARED ERRORS: 2.587 NO. OF POINTS: 50

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.997	2.667	3.327
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.061	0.054	0.068
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0009	0.0009

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.791 x 10	2.983×10^2	-1.068×10^4	
$(\alpha - \hat{\alpha})$	-	6.736×10^3	-4.330×10^4	
$(\beta - \hat{\beta})$	-	-	1.909×10^6	0.573

SUM OF SQUARED ERRORS: 3.300

NO. OF POINTS: 52

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.056	0.045	0.067
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0014	0.0014

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	5.101	6.692 x 10	-3.017×10^3	
$(\alpha - \hat{\alpha})$	-	1.610×10^3	-1.016×10^4	
$(\beta - \hat{\beta})$	-	-	5.245×10^5	0.381

SUM OF SQUARED ERRORS: 0.626

NO. OF POINTS: 17

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.222	1.828	2.617
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.061	0.049	0.073
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0009	-0.0004	0.0022

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	5.024	2.772 x 10	-2.758×10^3	
$(\alpha - \hat{\alpha})$	-	7.604×10^2	-2.762×10^3	
$(\beta - \hat{\beta})$	-	-	4.414×10^5	0.279

SUM OF SQUARED ERRORS: 0.393

NO. OF POINTS: 15

		0.092	0.088
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0009	-0.0006	0.0025

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	6.915	4.777 x 10	-2.887×10^3	
$(\alpha - \hat{\alpha})$	-	6.581×10^2	-4.292×10^3	
$(\beta - \hat{\beta})$	-	-	3.795×10^5	0.478

SUM OF SQUARED ERRORS: 0.843

NO. OF POINTS: 18.

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	1.685	1.479	1.890
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.077	0.061	0.093
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0008	-0.0000	0.0015

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	7.400	3.048 x 10	-3.147×10^3	
$(\alpha - \hat{\alpha})$	-	3.286×10^2	-1.930×10^3	
$(\beta - \hat{\beta})$	-	-	4.592×10^5	0.200

SUM OF SQUARED ERRORS: 0.329

NO. OF POINTS: 17

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	[illegible]	[illegible]	[illegible]
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0007	-0.0002	0.0017

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	5.058	4.1 x 10	-2.667×10^3	
$(\alpha - \hat{\alpha})$	-	7.115×10^2	-3.952×10^3	
$(\beta - \hat{\beta})$	-	-	4.296×10^5	0.153

SUM OF SQUARED ERRORS: 0.234

NO. OF POINTS: 16

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	1.382	1.186	1.578
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.037	0.030	0.043
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0012	0.0005	0.0019

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	5.137	4.631 x 10	-2.369×10^3	
$(\alpha - \hat{\alpha})$	-	7.321×10^2	-4.646×10^3	
$(\beta - \hat{\beta})$	-	-	3.279×10^5	0.064

SUM OF SQUARED ERRORS: 0.097

NO. OF POINTS: 16

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.051	0.040	0.063
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0054	0.0004	0.0103

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	3.369	5.089 x 10	-1.098×10^3	
$(\alpha - \hat{\alpha})$	-	1.341×10^3	-5.517×10^3	
$(\beta - \hat{\beta})$	-	-	9.569×10^4	0.332

SUM OF SQUARED ERRORS: 0.507 NO. OF POINTS: 16

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.011	1.311	2.711
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.037	0.026	0.049
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0016	-0.0008	0.0039

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	4.273	6.212 x 10	-2.255×10^3	
$(\alpha - \hat{\alpha})$	-	1.595×10^3	-8.593×10^3	
$(\beta - \hat{\beta})$	-	-	3.294×10^5	0.352

SUM OF SQUARED ERRORS: 0.496

NO. OF POINTS: 15

[illegible]	[illegible]	0.083	0.119
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0007	-0.0001	0.0015

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.497 x 10	1.108×10^2	-1.012×10^4	
$(\alpha - \hat{\alpha})$	-	8.876×10^2	-7.123×10^3	
$(\beta - \hat{\beta})$	-	-	1.451×10^6	0.632

SUM OF SQUARED ERRORS: 3.486

NO. OF POINTS: 50

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.347	2.055	2.640
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.058	0.050	0.066
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0016	0.0006	0.0027

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.814×10	2.031×10^2	-8.452×10^3	
$(\alpha - \hat{\alpha})$	-	3.656×10^3	-2.172×10^4	
$(\beta - \hat{\beta})$	-	-	1.162×10^6	0.437

SUM OF SQUARED ERRORS: 2.308

NO. OF POINTS: 48

α mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	0.075	0.064	0.085
β mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	0.0006	-0.0004	0.0016

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.174 x 10	2.542×10^2	-1.214×10^4	
$(\alpha - \hat{\alpha})$	-	4.395×10^3	-3.259×10^4	
$(\beta - \hat{\beta})$	-	-	2.116×10^6	0.962

SUM OF SQUARED ERRORS: 5.646

NO. OF POINTS: 53

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.272	2.047	2.498
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.058	0.050	0.066
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0007	0.0000	0.0015

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.830×10	1.801×10^2	-9.167×10^3	
$(\alpha - \hat{\alpha})$	-	3.147×10^3	-2.053×10^4	
$(\beta - \hat{\beta})$	-	-	1.416×10^6	3.724

SUM OF SQUARED ERRORS: 1.967

NO. OF POINTS: 48

β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0022	0.0010	0.0034

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.739×10	2.156×10^2	-8.511×10^3	
$(\alpha - \hat{\alpha})$	-	4.206×10^3	-2.302×10^4	
$(\beta - \hat{\beta})$	-	-	1.264×10^6	0.749

SUM OF SQUARED ERRORS: 4.220

NO. OF POINTS: 51

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.871	3.186	4.557
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.057	0.051	0.064
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0045	0.0017	0.0072

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.278 x 10	3.429×10^2	-5.734×10^3	
$(\alpha - \hat{\alpha})$	-	1.058×10^4	-5.396×10^4	
$(\beta - \hat{\beta})$	-	-	6.875×10^5	0.661

SUM OF SQUARED ERRORS: 3.803

NO. OF POINTS: 52

α mg C(mg Chl α)$^{-1}$ h^{-1}/W^{-2}	[illegible]	0.070	0.090
β mg C(mg Chl α)$^{-1}$ h^{-1}/W^{-2}	0.0002	-0.0006	0.0010

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.196 x 10	1.951×10^2	-1.205×10^4	
$(\alpha - \hat{\alpha})$	-	3.111×10^3	-2.095×10^4	
$(\beta - \hat{\beta})$	-	-	2.143×10^6	0.689

SUM OF SQUARED ERRORS: 4.047

NO. OF POINTS: 53

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	1.996	1.753	2.238
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.055	0.046	0.063
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0007	0.0007

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.944 x 10	1.684×10^2	-1.195×10^4	
$(\alpha - \hat{\alpha})$	-	3.001×10^3	-1.767×10^4	
$(\beta - \hat{\beta})$	-	-	2.269×10^6	0.436

SUM OF SQUARED ERRORS: 2.357

NO. OF POINTS: 49

			0.070
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0007	0.0007

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.998 x 10	1.503×10^2	-1.102×10^4	
$(\alpha - \hat{\alpha})$	-	2.280×10^3	-1.464×10^4	
$(\beta - \hat{\beta})$	-	-	1.920×10^6	0.435

SUM OF SQUARED ERRORS: 2.349 NO. OF POINTS: 49

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.436	2.089	2.782
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.053	0.044	0.063
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0007	-0.0003	0.0017

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.138 x 10	2.314×10^2	-1.289×10^4	
$(\alpha - \hat{\alpha})$	-	4.943×10^3	-3.003×10^4	
$(\beta - \hat{\beta})$	-	-	2.323×10^6	0.852

SUM OF SQUARED ERRORS: 5.102

NO. OF POINTS: 54

α mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	[illegible]	[illegible]	[illegible]
β mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	0.0005	-0.0002	0.0012

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.223 x 10	1.918×10^2	-1.101×10^4	
$(\alpha - \hat{\alpha})$	-	2.675×10^3	-1.947×10^4	
$(\beta - \hat{\beta})$	-	-	1.796×10^6	0.517

SUM OF SQUARED ERRORS: 3.039

NO. OF POINTS: 53

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.735	2.381	3.089
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.090	0.069	0.110
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0005	-0.0006	0.0016

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.766 x 10	1.749×10^2	-1.431×10^4	
$(\alpha - \hat{\alpha})$	-	2.065×10^3	-1.595×10^4	
$(\beta - \hat{\beta})$	-	-	2.467×10^6	1.849

SUM OF SQUARED ERRORS: 1.193 x 10

NO. OF POINTS: 58

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.056	0.045	0.067
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0010	0.0010

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.130 x 10	2.244×10^2	-1.280×10^4	
$(\alpha - \hat{\alpha})$	-	4.276×10^3	-2.848×10^4	
$(\beta - \hat{\beta})$	-	-	2.397×10^6	1.025

SUM OF SQUARED ERRORS: 6.135

NO. OF POINTS: 54

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.357	2.131	2.584
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.071	0.061	0.082
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0007	-0.0001	0.0015

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.191×10	1.900×10^2	-1.009×10^4	
$(\alpha - \hat{\alpha})$	-	2.492×10^3	-1.835×10^4	
$(\beta - \hat{\beta})$	-	-	1.517×10^6	0.529

SUM OF SQUARED ERRORS: 3.108

NO. OF POINTS: 53

α mg C(mg Chl *a*)$^{-1}$ h^{-1}/W^{-2}	[illegible]	[illegible]	[illegible]
β mg C(mg Chl *a*)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0009	0.0009

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.167 x 10	1.435×10^2	-1.347×10^4	
$(\alpha - \hat{\alpha})$	-	2.645×10^3	-1.496×10^4	
$(\beta - \hat{\beta})$	-	-	2.631×10^6	1.131

SUM OF SQUARED ERRORS: 6.373

NO. OF POINTS: 51

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.533	3.123	3.942
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.111	0.091	0.130
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0013	0.0013

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.288 x 10	1.753×10^2	-1.187×10^4	
$(\alpha - \hat{\alpha})$	-	2.463×10^3	1.673×10^4	
$(\beta - \hat{\beta})$	-	-	2.013×10^6	1.897

SUM OF SQUARED ERRORS: 1.135 x 10

NO. OF POINTS: 54

β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0021	0.0003	0.0038

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.716 x 10	2.625×10^2	-7.717×10^3	
$(\alpha - \hat{\alpha})$	-	5.258×10^3	-3.289×10^4	
$(\beta - \hat{\beta})$	-	-	1.005×10^6	0.889

SUM OF SQUARED ERRORS: 5.219

NO. OF POINTS: 53

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.447	2.874	4.021
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.087	0.073	0.102
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0031	0.0007	0.0054

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	7.462	9.874 x 10	-3.140×10^3	
$(\alpha - \hat{\alpha})$	-	1.942×10^3	-9.821×10^3	
$(\beta - \hat{\beta})$	-	-	3.892×10^5	0.658

SUM OF SQUARED ERRORS: 1.700

NO. OF POINTS: 25

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	[illegible]	[illegible]	[illegible]
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0031	0.0002	0.0059

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	8.536	1.858×10^2	-4.938×10^3	
$(\alpha - \hat{\alpha})$	-	5.731×10^3	-3.039×10^4	
$(\beta - \hat{\beta})$	-	-	7.887×10^5	1.127

SUM OF SQUARED ERRORS: 3.308

NO. OF POINTS: 28

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.428	3.020	3.825
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.117	0.093	0.141
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0005	-0.0009	0.0018

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.345 x 10	1.423×10^2	-1.160×10^4	
$(\alpha - \hat{\alpha})$	-	1.706×10^3	-1.247×10^4	
$(\beta - \hat{\beta})$	-	-	1.893×10^6	2.047

SUM OF SQUARED ERRORS: 1.153 x 10 NO. OF POINTS: 51

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.084	0.071	0.096
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0026	0.0001	0.0052

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	7.464	1.356×10^2	-3.659×10^3	
$(\alpha - \hat{\alpha})$	-	3.341×10^3	-1.789×10^4	
$(\beta - \hat{\beta})$	-	-	5.120×10^5	0.850

SUM OF SQUARED ERRORS: 2.296 **NO. OF POINTS:** 26

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.484	2.196	2.772
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.076	0.063	0.089
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0004	-0.0006	0.0013

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.023 x 10	9.233 x 10	-5.023×10^3	
$(\alpha - \hat{\alpha})$	-	1.315×10^3	-8.849×10^3	
$(\beta - \hat{\beta})$	-	-	8.294×10^5	0.451

SUM OF SQUARED ERRORS: 1.217

NO. OF POINTS: 26

- mg C(mg Chl a) [illegible]	[illegible]	0.078	0.107
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0017	0.0017

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.709 x 10	2.772×10^2	-9.797×10^3	
$(\alpha - \hat{\alpha})$	-	6.104×10^3	-3.831×10^4	
$(\beta - \hat{\beta})$	-	-	1.754×10^6	2.425

SUM OF SQUARED ERRORS: 1.394 x 10 NO. OF POINTS: 52

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.815	2.528	3.102
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.066	0.570	0.076
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0008	0.0008

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.988 x 10	2.291×10^2	-1.238×10^4	
$(\alpha - \hat{\alpha})$	-	4.583×10^3	-2.909×10^4	
$(\beta - \hat{\beta})$	-	-	2.506×10^6	0.796

SUM OF SQUARED ERRORS: 4.767

NO. OF POINTS: 54

β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0011	-0.0000	0.0022

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.158 x 10	2.143×10^2	-1.033×10^4	
$(\alpha - \hat{\alpha})$	-	3.488×10^3	-2.272×10^4	
$(\beta - \hat{\beta})$	-	-	1.552×10^6	0.926

SUM OF SQUARED ERRORS: 5.657

NO. OF POINTS: 55

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.083	1.915	2.252
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.073	0.063	0.083
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0005	0.0005

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.608 x 10	1.576×10^2	-1.388×10^4	
$(\alpha - \hat{\alpha})$	-	1.928×10^3	-1.350×10^4	
$(\beta - \hat{\beta})$	-	-	2.513×10^6	0.429

SUM OF SQUARED ERRORS: 2.674

NO. OF POINTS: 56

[illegible]	[illegible]	[illegible]	0.079
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0007	0.0007

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.057 x 10	1.802×10^2	-1.053×10^4	
$(\alpha - \hat{\alpha})$	-	2.458×10^3	-1.723×10^4	
$(\beta - \hat{\beta})$	-	-	1.829×10^6	0.620

SUM OF SQUARED ERRORS: 3.566

NO. OF POINTS: 52

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.523	2.265	2.780
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.067	0.058	0.075
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0015	0.0005	0.0024

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.948×10	1.798×10^2	-8.888×10^3	
$(\alpha - \hat{\alpha})$	-	3.257×10^3	-1.897×10^4	
$(\beta - \hat{\beta})$	-	-	1.214×10^6	0.454

SUM OF SQUARED ERRORS: 2.614

NO. OF POINTS: 52

β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0034	0.0009	0.0059

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.064 x 10	2.320×10^2	-4.966×10^2	
$(\alpha - \hat{\alpha})$	-	6.666×10^3	-3.118×10^4	
$(\beta - \hat{\beta})$	-	-	6.535×10^5	0.939

SUM OF SQUARED ERRORS: 4.852 NO. OF POINTS: 47

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.840	2.548	3.131
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.092	0.077	0.107
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0003	-0.0006	0.0013

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.401 x 10	1.802×10^2	-1.221×10^4	
$(\alpha - \hat{\alpha})$	-	2.235×10^3	-1.638×10^4	
$(\beta - \hat{\beta})$	-	-	2.063×10^6	1.037

SUM OF SQUARED ERRORS: 6.455

NO. OF POINTS: 56

β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0005	-0.0011	0.0021

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.315 x 10	2.117×10^2	-1.216×10^4	
$(\alpha - \hat{\alpha})$	-	3.316×10^3	-2.228×10^4	
$(\beta - \hat{\beta})$	-	-	2.037×10^6	2.694

SUM OF SQUARED ERRORS: 1.707 x 10 NO. OF POINTS: 57

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.382	2.046	2.718
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.061	0.051	0.072
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0015	0.0003	0.0028

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.238 x 10	2.380×10^2	-1.030×10^4	
$(\alpha - \hat{\alpha})$	-	4.025×10^3	-2.515×10^4	
$(\beta - \hat{\beta})$	-	-	1.443×10^6	0.882

SUM OF SQUARED ERRORS: 5.697

NO. OF POINTS: 58

- mg C(mg Chl a)	0.074	0.065	0.082
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0014	0.0007	0.0020

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.979 x 10	1.404×10^2	-8.549×10^3	
$(\alpha - \hat{\alpha})$	-	1.761×10^3	-1.175×10^4	
$(\beta - \hat{\beta})$	-	-	1.215×10^6	0.295

SUM OF SQUARED ERRORS: 1.597

NO. OF POINTS: 49

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	1.903	1.729	2.078
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.078	0.064	0.092
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0004	-0.0002	0.0010

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.783 x 10	1.173×10^2	-1.338×10^4	
$(\alpha - \hat{\alpha})$	-	1.205×10^3	-8.563×10^3	
$(\beta - \hat{\beta})$	-	-	2.204×10^6	0.531

SUM OF SQUARED ERRORS: 3.308

NO. OF POINTS: 56

β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0011	0.0001	0.0022

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.653 x 10	1.383×10^2	-1.205×10^4	
$(\alpha - \hat{\alpha})$	-	1.378×10^3	-9.995×10^3	
$(\beta - \hat{\beta})$	-	-	1.892×10^6	1.420

SUM OF SQUARED ERRORS: 9.003

NO. OF POINTS: 57

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.217	1.985	2.450
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.056	0.049	0.064
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0009	0.0001	0.0017

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.139 x 10	2.387×10^2	-1.087×10^4	
$(\alpha - \hat{\alpha})$	-	4.199×10^3	-2.637×10^4	
$(\beta - \hat{\beta})$	-	-	1.720×10^6	0.447

SUM OF SQUARED ERRORS: 2.838

NO. OF POINTS: 57

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.056	0.04[illegible]	[illegible]
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0002	-0.0002	0.0007

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.497×10	1.896×10^2	-1.382×10^4	
$(\alpha - \hat{\alpha})$	-	2.824×10^3	-1.918×10^4	
$(\beta - \hat{\beta})$	-	-	2.520×10^6	0.349

SUM OF SQUARED ERRORS: 2.213

NO. OF POINTS: 57

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.369	2.170	2.567
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.062	0.055	0.069
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0012	0.0005	0.0019

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.125 x 10	2.173×10^2	-1.004×10^4	
$(\alpha - \hat{\alpha})$	-	3.482×10^3	-2.354×10^4	
$(\beta - \hat{\beta})$	-	-	1.487×10^6	0.346

SUM OF SQUARED ERRORS: 2.071

NO. OF POINTS: 54

β mg C(mg Chl a)$^{-1}$ h^{-1}/$_W$$^{-2}$	0.0001	-0.0008	0.0010

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{I}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.400 x 10	2.038×10^2	-1.384×10^4	
$(\alpha - \hat{\alpha})$	-	2.900×10^3	-2.064×10^4	
$(\beta - \hat{\beta})$	-	-	2.540×10^6	1.158

SUM OF SQUARED ERRORS: 7.344 NO. OF POINTS: 57

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.641	2.346	2.937
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.081	0.068	0.093
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0007	-0.0002	0.0017

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.139 x 10	1.818 x 10^2	-1.053 x 10^4	
$(\alpha - \hat{\alpha})$	-	2.664 x 10^3	-1.693 x 10^4	
$(\beta - \hat{\beta})$	-	-	1.671 x 10^6	0.851

SUM OF SQUARED ERRORS: 5.095

NO. OF POINTS: 54

α mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	0.005	0.007	0.012
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0006	0.0006

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.438 x 10	2.137×10^2	-1.310×10^4	
$(\alpha - \hat{\alpha})$	-	3.253×10^3	-2.380×10^4	
$(\beta - \hat{\beta})$	-	-	2.327×10^6	0.472

SUM OF SQUARED ERRORS: 2.995

NO. OF POINTS: 57

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	1.727	1.539	1.915
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.048	0.040	0.056
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.000	-0.0006	0.0000

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.391 x 10	2.316×10^2	-1.286×10^4	
$(\alpha - \hat{\alpha})$	-	3.441×10^3	-2.537×10^4	
$(\beta - \hat{\beta})$	-	-	2.333×10^6	0.455

SUM OF SQUARED ERRORS: 2.835

NO. OF POINTS: 56

β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0005	0.0005

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.169 x 10	2.299×10^2	-1.257×10^4	
$(\alpha - \hat{\alpha})$	-	4.173×10^3	-2.651×10^4	
$(\beta - \hat{\beta})$	-	-	2.337×10^6	0.285

SUM OF SQUARED ERRORS: 1.740

NO. OF POINTS: 55

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	1.665	1.440	1.890
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.033	0.029	0.038
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0008	0.0000	0.0015

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.677 x 10	2.427×10^2	-9.170×10^3	
$(\alpha - \hat{\alpha})$	-	6.159×10^3	-3.306×10^4	
$(\beta - \hat{\beta})$	-	-	1.446×10^6	0.220

SUM OF SQUARED ERRORS: 1.266

NO. OF POINTS: 52

β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0012	0.0001	0.0022

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.105 x 10	1.904×10^2	-9.060×10^3	
$(\alpha - \hat{\alpha})$	-	2.639×10^3	-1.857×10^4	
$(\beta - \hat{\beta})$	-	-	1.190×10^6	0.510

SUM OF SQUARED ERRORS: 3.058

NO. OF POINTS: 54

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.031	1.776	2.286
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.049	0.043	0.055
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0023	0.0011	0.0035

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	1.551×10^{0}	2.288×10^{2}	-5.699×10^{3}	
$(\alpha - \hat{\alpha})$	-	4.134×10^{3}	-2.393×10^{4}	
$(\beta - \hat{\beta})$	-	-	6.136×10^{5}	0.274

SUM OF SQUARED ERRORS: 1.578^{8}

NO. OF POINTS: 52

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.066	0.056	0.076
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0005	-0.0004	0.0014

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.026 x 10	2.351×10^2	-1.004×10^4	
$(\alpha - \hat{\alpha})$	-	3.684×10^3	-2.545×10^4	
$(\beta - \hat{\beta})$	-	-	1.592×10^6	0.654

SUM OF SQUARED ERRORS: 4.071

NO. OF POINTS: 56

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	3.108	2.270	3.946
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.068	0.050	0.086
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0003	-0.0019	0.0025

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	5.143	6.953 x 10	-3.378×10^3	
$(\alpha - \hat{\alpha})$	-	1.811×10^3	-8.793×10^3	
$(\beta - \hat{\beta})$	-	-	6.668×10^5	1.172

SUM OF SQUARED ERRORS: 2.063

NO. OF POINTS: 18

[illegible]	0.032	0.042	0.063
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0035	0.0000	0.0070

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	3.263	9.693 x 10	-1.756×10^3	
$(\alpha - \hat{\alpha})$	-	3.307×10^3	1.645×10^4	
$(\beta - \hat{\beta})$	-	-	2.599×10^5	0.532

SUM OF SQUARED ERRORS: 0.874

NO. OF POINTS: 17

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.418	1.600	3.237
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.068	0.047	0.088
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0038	0.0038

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	4.608	5.892×10	-1.727×10^3	
$(\alpha - \hat{\alpha})$	-	9.880×10^2	-6.321×10^3	
$(\beta - \hat{\beta})$	-	-	1.859×10^5	0.738

SUM OF SQUARED ERRORS: 1.126

NO. OF POINTS: 16

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.061	0.050	0.073
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0004	-0.0005	0.0012

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	6.592	6.002 x 10	-4.067×10^3	
$(\alpha - \hat{\alpha})$	-	1.180×10^3	-6.574×10^3	
$(\beta - \hat{\beta})$	-	-	8.051×10^5	0.318

SUM OF SQUARED ERRORS: 0.597

NO. OF POINTS: 19

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl *a*)$^{-1}$ h^{-1}	3.262	2.616	3.909
α mg C(mg Chl *a*)$^{-1}$ h^{-1}/W^{-2}	0.054	0.047	0.061
β mg C(mg Chl *a*)$^{-1}$ h^{-1}/W^{-2}	0.0045	0.0019	0.0072

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	3.920	6.711 x 10	-1.781×10^3	
$(\alpha - \hat{\alpha})$	-	2.402×10^3	-9.194×10^3	
$(\beta - \hat{\beta})$	-	-	2.178×10^5	0.233

SUM OF SQUARED ERRORS: 0.410

NO. OF POINTS: 18

α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.068	0.055	0.080
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0013	0.0013

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	5.226	7.333 x 10	-3.116×10^3	
$(\alpha - \hat{\alpha})$	-	1.671×10^2	-9.729×10^3	
$(\beta - \hat{\beta})$	-	-	5.914×10^5	0.536

SUM OF SQUARED ERRORS: 1.007 NO. OF POINTS: 19

	Parameter Value	Lower Limit	Upper Limit
P_s mg C(mg Chl *a*)$^{-1}$ h^{-1}	2.402	1.967	2.836
α mg C(mg Chl *a*)$^{-1}$ h^{-1}/W^{-2}	0.052	0.044	0.060
β mg C(mg Chl *a*)$^{-1}$ h^{-1}/W^{-2}	0.0000	-0.0011	0.0011

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	4.028	4.984 x 10	-2.808×10^3	
$(\alpha - \hat{\alpha})$	-	1.600×10^3	-6.352×10^3	
$(\beta - \hat{\beta})$	-	-	5.682×10^5	0.213

SUM OF SQUARED ERRORS: 0.350

NO. OF POINTS: 17

α mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	0.045	0.035	0.056
β mg C(mg Chl a) $^{-1}$ h $^{-1}$/W $^{-2}$	0.0000	-0.0024	0.0024

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.497	8.828 x 10	-2.138×10^3	
$(\alpha - \hat{\alpha})$	-	4.626×10^3	-1.822×10^4	
$(\beta - \hat{\beta})$	-	-	5.288×10^5	0.820

SUM OF SQUARED ERRORS: 1.348

NO. OF POINTS: 17

P_s mg C(mg Chl a)$^{-1}$ h^{-1}	2.576	2.340	2.812
α mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.071	0.063	0.080
β mg C(mg Chl a)$^{-1}$ h^{-1}/W^{-2}	0.0015	0.0007	0.0023

COEFFICIENTS IN EQUATION FOR ELLIPSOIDAL JOINT CONFIDENCE REGION

	$(P_s - \hat{P}_s)$	$(\alpha - \hat{\alpha})$	$(\beta - \hat{\beta})$	Constant
$(P_s - \hat{P}_s)$	2.233×10	1.919×10^2	-1.116×10^4	
$(\alpha - \hat{\alpha})$	-	3.295×10^3	-1.892×10^4	
$(\beta - \hat{\beta})$	-	-	1.721×10^6	0.492

SUM OF SQUARED ERRORS: 3.124

NO. OF POINTS: 57

LIGHT SATURATION DATA, PARTICULATES & NUTRIENTS

I	P	I	P	I	P	I	P
630	3.63	49	2.26	4.4	0.10	97	3.60
583	3.77	46	2.52	3.4	0.11	64	3.10
461	4.48	30	2.08	3.3	0.05	70	3.41
469	3.69	25	1.96	490	5.14	50	2.12
359	4.85	21	1.22	583	5.43	54	2.06
327	3.47	18	1.15	478	6.07		
262	4.34	15	0.68	266	3.93		
239	4.22	13	0.91	332	3.78		
243	5.33	12	0.60	203	4.81		
167	4.91	11	0.54	243	5.05		
141	3.64	7.5	0.39	151	4.14		
131	3.30	6.6	0.34	179	4.59		
119	3.80	5.6	0.19	115	4.39		
90	3.91	5.6	0.10	130	4.01		
71	3.97	4.5	0.18	91	3.50		

SAMPLE TEMPERATURE: 4.0 °C

INCUBATION TEMPERATURE: 4.5 °C

INCUBATION TIME: 3 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	2.27	RNA:	16.17	PHOSPHATE:	0.60
CARBON:	-	DNA:	2.74	NITRATE:	0.07
NITROGEN:	22.00	ATP:	0.575	SILICATE:	5.45
PROTEIN:	47.40			AMMONIA:	2.22

291	6.06	21	1.15	376	5.84
253	5.61	18	1.11	486	5.17
198	6.67	16	0.61	255	6.15
186	7.02	13	0.78	340	6.07
152	5.40	11	0.39	200	5.85
129	5.51	10	0.45	239	5.89
112	6.30	7.0	0.01	165	5.72
93	5.56	6.6	0.00	109	5.75
76	4.81	4.5	0.02	119	5.95
66	4.43	4.4	0.03	92	4.82
61	3.96	3.8	0.02	90	5.35
52	3.36	3.4	0.02	70	4.69

SAMPLE TEMPERATURE: 5.0 °C

INCUBATION TEMPERATURE: 6.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.40
CARBON:	-
NITROGEN:	16.00
PROTEIN:	43.60

	mg m^{-3}
RNA:	10.38
DNA:	4.72
ATP:	0.674

	mg at-m^{-3}
PHOSPHATE:	0.42
NITRATE:	0.24
SILICATE:	10.53
AMMONIA:	0.84

I	P	I	P	I	P	I	P
617	1.73	53	1.31	4.4	0.06	124	1.86
528	2.01	46	1.11	3.3	0.08	115	1.63
473	1.97	41	1.03	3.5	0.03	88	1.53
373	1.71	37	1.06	2.6	0.04	86	1.71
-	-	25	0.55	2.8	0.05	75	1.68
285	1.89	22	0.68	528	1.95	70	1.54
262	1.73	18	0.38	613	1.38	55	1.40
216	1.56	17	0.43	408	1.84	55	1.35
169	1.91	13	0.23	426	1.66	40	1.20
152	1.49	12	0.27	297	1.86	39	1.03
129	1.64	10.6	0.20	342	1.57		
95	1.26	10.3	1.19	215	1.67		
87	1.61	6.6	0.09	262	1.45		
70	1.37	6.6	0.07	165	1.54		
61	1.43	4.1	0.10	173	1.56		

SAMPLE TEMPERATURE: 1.6 °C

INCUBATION TEMPERATURE: 3.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	5.92
CARBON:	-
NITROGEN:	26.00
PROTEIN:	93.00

	mg m^{-3}
RNA:	10.14
DNA:	1.05
ATP:	-

	mg at-m^{-3}
PHOSPHATE:	0.52
NITRATE:	0.13
SILICATE:	1.85
AMMONIA:	0.88

316	3.29	24	1.20	2.5	0.07	69	2.87
253	3.52	22	1.04	486	3.15	69	3.38
211	3.30	17	0.75	579	3.21	50	2.46
224	4.03	14	0.71	376	3.51	48	2.95
162	3.46	13	0.54	461	3.11	39	1.91
181	2.97	11	0.46	302	3.49	36	2.00
126	2.86	10.1	0.42	338	3.34		
121	3.22	7.7	0.29	215	3.10		
90	3.37	6.6	0.14	255	3.05		
69	3.00	5.1	0.16	169	3.61		
67	2.75	4.6	0.02	188	3.42		
52	2.23	4.1	0.07	118	3.48		

SAMPLE TEMPERATURE: 2.8 °C

INCUBATION TEMPERATURE: 4.5 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	2.23	RNA:	9.64	PHOSPHATE:	0.50
CARBON:	-	DNA:	2.72	NITRATE:	0.10
NITROGEN:	18.00	ATP:	0.677	SILICATE:	2.10
PROTEIN:	44.80			AMMONIA:	0.72

I	P	I	P	I	P	I	P
594	3.33	33	2.36	3.2	0.02	54	3.30
465	4.02	33	1.99	3.3	0.01	39	3.22
490	3.77	27	2.80	2.6	0.06	44	3.02
332	4.17	17	1.42	2.7	0.05	33	2.61
267	3.54	17	1.70	427	3.34	35	3.17
226	3.22	13	0.84	552	3.34		
198	3.84	12	0.90	435	2.86		
157	3.44	10.7	0.68	267	3.00		
148	3.55	10.4	0.57	199	2.99		
105	3.51	8.0	0.59	241	2.76		
82	2.94	8.6	0.39	161	3.31		
74	3.56	5.4	0.25	105	3.98		
63	3.77	5.2	0.14	77	3.19		
57	4.01	4.0	0.04	68	3.09		
46	2.45	4.1	0.07	50	3.63		

SAMPLE TEMPERATURE: 3 °C

INCUBATION TEMPERATURE: 4.5 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.850
CARBON:	-
NITROGEN:	16.00
PROTEIN:	37.50

	mg m^{-3}
RNA:	11.50
DNA:	2.06
ATP:	0.767

	mg at-m^{-3}
PHOSPHATE:	0.48
NITRATE:	0.040
SILICATE:	2.100
AMMONIA:	1.96

287	3.97	31	1.66	3	0.00	50	3.71
285	3.38	19	1.33	3	0.03	48	3.28
243	3.57	17	1.62	456	3.49	48	3.42
200	3.24	12	0.93	613	3.41	38	2.82
160	4.09	14	1.01	347	3.39	44	2.77
114	3.35	11	0.68	439	3.02	30	2.69
115	2.88	10	0.60	283	3.07	35	2.39
85	2.74	9	0.49	316	2.79		
78	3.54	4	0.50	190	2.76		
66	3.40	6	0.22	228	2.94		
52	2.68	5	0.23	110	3.87		
47	2.56	5	0.10	137	3.58		

SAMPLE TEMPERATURE: 2.8 °C

INCUBATION TEMPERATURE: 3.2 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	2.180
CARBON:	-
NITROGEN:	14.00
PROTEIN:	49.40

	mg m^{-3}
RNA:	12.98
DNA:	2.65
ATP:	0.554

	mg at-m^{-3}
PHOSPHATE:	0.47
NITRATE:	0.17
SILICATE:	2.85
AMMONIA:	0.78

I	P	I	P	I	P	I	P
465	3.25	37	2.05	2.9	0.07	53	2.65
448	2.93	28	1.82	3.2	0.05	62	2.59
346	3.45	27	2.15	2.8	0.00	41	2.24
310	3.45	17	1.62	2.8	0.09	46	2.27
245	3.38	18	1.33	422	3.69	32	1.81
180	3.22	14	0.80	549	2.88	36	1.88
178	3.07	14	0.97	444	2.83		
140	2.80	11	0.75	181	3.37		
126	2.54	11	0.74	148	2.49		
100	2.74	8.8	0.33	208	3.01		
90	2.43	8.6	0.47	113	2.80		
71	2.61	5.5	0.13	79	3.17		
48	3.39	4.8	0.14	110	3.09		
48	2.82	3.7	0.10	64	3.00		
38	2.62	4.0	0.05	79	3.43		

SAMPLE TEMPERATURE: 3.5 °C

INCUBATION TEMPERATURE: 3.7 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.76	RNA:	6.59	PHOSPHATE:	0.48
CARBON:	-	DNA:	2.19	NITRATE:	0.08
NITROGEN:	13.00	ATP:	0.532	SILICATE:	2.14
PROTEIN:	40.50			AMMONIA:	0.94

340	3.62	33	2.13	3.3	0.04	78	3.12
325	4.15	34	1.98	2.8	0.00	83	3.28
258	3.63	22	1.39	2.9	0.02	62	2.70
220	3.31	19	1.28	486	3.70	60	3.98
200	2.92	16	1.07	613	3.89	44	3.09
154	4.04	14	0.95	329	3.56	45	3.10
139	3.25	14	0.66	486	3.06	35	2.11
113	2.82	11	0.81	279	3.36	34	2.29
107	2.84	10.8	0.38	355	3.02		
89	3.11	9.9	0.55	192	3.95		
85	4.26	6.6	0.27	246	2.89		
66	3.33	5.4	0.15	143	3.47		
61	3.57	4.5	0.08	165	4.29		

SAMPLE TEMPERATURE: 3.3 °C

INCUBATION TEMPERATURE: 4.3 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.36	RNA:	7.17	PHOSPHATE:	0.52
CARBON:	-	DNA:	1.83	NITRATE:	0.08
NITROGEN:	15.00	ATP:	0.467	SILICATE:	1.61
PROTEIN:	57.2			AMMONIA:	1.63

I	P	I	P	I	P	I	P
575	5.11	56	3.38	4.4	0.07	148	4.70
486	5.40	51	2.32	4.7	0.00	105	4.86
444	5.34	44	2.78	3.3	0.00	107	4.80
359	4.92	38	1.98	3.4	0.00	76	4.66
308	5.27	33	1.84	2.2	0.00	77	3.82
266	5.80	18	1.36	2.4	0.00	55	3.81
234	4.73	22	1.18	537	5.29	57	3.61
186	4.43	14	0.76	592	4.29	41	2.97
155	4.28	15	0.80	384	5.52	41	3.36
135	4.68	11	0.46	482	4.70	32	2.07
119	5.08	12	0.54	283	4.59	30	2.60
94	4.21	8.7	0.30	342	4.38		
88	3.63	9.7	0.34	215	4.34		
71	3.60	5.7	0.20	198	4.12		
68	3.56	5.9	0.90	152	4.93		

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 4.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	0.90
CARBON:	-
NITROGEN:	14.00
PROTEIN:	33.50

	mg m^{-3}
RNA:	6.43
DNA:	2.38
ATP:	0.365

	mg at-m^{-3}
PHOSPHATE:	0.46
NITRATE:	0.20
SILICATE:	1.77
AMMONIA:	1.52

444	3.76	42	2.16	3.6	0.00	60	3.57
329	4.46	32	2.24	3.7	0.08	64	3.96
325	4.06	25	1.75	3.0	0.00	44	3.41
233	3.69	23	1.64	3.1	0.04	47	3.06
181	3.15	18	1.10	478	3.41	35	2.32
165	3.51	15	1.17	613	2.83	36	2.37
139	3.64	14	0.52	342	4.50		
121	3.52	-	-	448	4.20		
105	3.59	12	0.63	257	4.55		
88	3.20	11	0.32	317	3.37		
74	2.99	10.4	0.60	151	3.24		
66	2.89	7.2	0.18	169	4.06		

SAMPLE TEMPERATURE: 4.0 °C

	mg m^{-3}
CHLOROPHYLL:	1.15
CARBON:	141.00
NITROGEN:	14.00
PROTEIN:	37.20

INCUBATION TEMPERATURE: 5.0 °C

	mg m^{-3}
RNA:	5.07
DNA:	0.64
ATP:	0.748

INCUBATION TIME: 2 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.50
NITRATE:	0.80
SILICATE:	1.38
AMMONIA:	0.94

I	P	I	P	I	P	I	P
636.1	2.44	57.3	2.26	5.8	0.08	85.9	1.74
497.1	2.48	51.4	2.40	4.8	0.05	87.2	2.61
446.6	3.18	46.3	2.45	4.5	0.00	70.4	2.22
425.5	2.53	40.4	1.98	4.0	0.02	66.1	2.75
345.5	2.94	35.4	1.62	3.3	0.01	50.1	1.91
292.8	2.41	24.9	1.34	3.2	0.00	50.6	2.18
265.4	2.40	21.9	0.96	648.8	2.61	38.3	1.79
198.0	2.38	18.9	0.69	438.1	2.88	35.4	2.06
205.2	2.46	16.0	0.81	286.5	2.66	.	0
156.7	2.29	15.2	0.49	201.8	2.91		
138.2	2.25	13.5	0.57	207.3	2.54		
116.7	2.94	11.8	0.27	210.2	2.45		
106.2	2.39	-	-	-	-		
89.3	3.12	8.8	0.38	149.6	3.01		
77.9	2.66	7.5	0.16	106.2	3.14		
66.6	2.99	6.1	0.19	122.6	3.13		

SAMPLE TEMPERATURE: 2.8 °C

INCUBATION TEMPERATURE: 2.8 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	4.66
CARBON:	-
NITROGEN:	21.00
PROTEIN:	91.70

	mg m^{-3}
RNA:	8.16
DNA:	4.24
ATP:	1.242

	mg at-m^{-3}
PHOSPHATE:	0.44
NITRATE:	0.06
SILICATE:	1.42
AMMONIA:	1.30

458.1	2.05	56.2	1.56	3.8	0.02	81.7	2.05
278.9	1.93	34.1	1.27	2.9	0.01	85.9	1.09
235.9	2.12	22.3	0.92	3.1	0.00	62.3	2.34
209.4	1.82	18.9	0.92	627.7	1.28	66.1	1.96
191.7	2.54	15.6	0.55	476.1	2.22	50.6	1.61
152.5	2.34	14.7	0.62	568.7	1.42	48.9	2.07
141.1	1.75	13.1	0.40	358.1	2.39	39.6	1.57
111.6	2.18	11.8	0.44	429.7	2.02	37.1	1.58
109.9	2.35	9.6	0.36	274.7	2.06		
88.5	1.95	9.7	0.29	290/7	1.85		
77.9	2.38	6.1	0.12	223.3	1.93		
69.1	2.09	6.0	0.14	130.2	2.72		
59.8	1.75	4.8	0.06	151.7	2.55		

SAMPLE TEMPERATURE: 2.7 °C

INCUBATION TEMPERATURE: 4.8°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	3.74
CARBON:	-
NITROGEN:	16.00
PROTEIN:	66.20

	mg m^{-3}
RNA:	12.61
DNA:	1.86
ATP:	0.611

	mg at-m^{-3}
PHOSPHATE:	0,52
NITRATE:	0.210
SILICATE:	2.94
AMMONIA:	1.72

I	P	I	P	I	P	I	P
547.7	3.34	52.7	3.50	4.5	0.06	165.1	3.77
438.1	3.35	48.9	2.65	4.5	0.05	109.5	2.94
378.3	3.19	42.1	2.08	3.3	0.03	129.8	3.15
311.8	3.95	37.9	2.20	3.4	0.01	87.2	3.33
294.5	3.63	34.1	1.50	2.4	0.00	86.4	2.56
260.8	3.20	20.2	1.20	2.6	0.02	66.6	2.81
202.2	2.90	20.2	1.10	488.7	2.81	62.4	2.51
192.1	2.66	15.2	1.06	556.1	2.20	51.4	3.15
142.4	3.22	13.1	0.80	343.4	2.40	47.6	2.32
129.8	2.69	12.2	0.63	438.1	2.73	40.9	2.01
112.5	3.06	10.7	0.51	261.2	3.00	36.6	2.47
89.3	2.81	9.3	0.39	329.5	2.58		
82.6	2.66	8.6	0.33	190.4	3.11		
62.4	2.60	5.9	0.13	230.9	3.25		
68.6	2.22	5.5	0.10	139.0	3.89		

SAMPLE TEMPERATURE: 2.7 °C

	$mg\ m^{-3}$
CHLOROPHYLL:	3.80
CARBON:	-
NITROGEN:	18.00
PROTEIN:	68.20

INCUBATION TEMPERATURE: 4.0 °C

	$mg\ m^{-3}$
RNA:	13.19
DNA:	2.04
ATP:	0.842

INCUBATION TIME: 2 HRS.

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	0.52
NITRATE:	0.90
SILICATE:	2.18
AMMONIA:	1.26

303.3	4.14	31.6	1.87	2.8	0.06	72.9	4.21
254.9	3.81	22.8	1.20	2.9	0.10	71.6	3.36
227.5	3.22	17.7	1.80	602.4	4.07	59.8	2.96
193.8	3.46	16.0	0.77	400.2	3.34	63.2	2.76
172.7	3.41	13.1	0.91	526.6	3.33	44.7	2.45
139.0	3.75	12.0	0.58	307.5	3.17	45.5	2.45
119.2	3.95	11.2	0.58	442.3	4.19	33.7	1.97
97.7	3.65	10.3	0.48	244.4	3.61	35.8	2.10
87.6	3.07	9.1	0.39	316.0	4.01		
68.3	3.26	6.0	0.18	168.5	3.20		
64.5	3.91	5.9	0.25	208.5	3.65		
54.7	2.83	4.3	0.07	125.5	4.48		
45.5	3.23	4.4	0.07	145.3	3.03		

SAMPLE TEMPERATURE: 4.0°C

	$mg\ m^{-3}$
CHLOROPHYLL:	1.81
CARBON:	-
NITROGEN:	15.00
PROTEIN:	46.50

INCUBATION TEMPERATURE: 5.5 °C

	$mg\ m^{-3}$
RNA:	6.35
DNA:	3.93
ATP:	0.866

INCUBATION TIME: 2 HRS.

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	0.48
NITRATE:	0.21
SILICATE:	3.44
AMMONIA:	0.56

303.3	4.14	31.6	1.87	2.8	0.06	72.9	4.21
254.9	3.81	22.8	1.20	2.9	0.10	71.6	3.36
227.5	3.22	17.7	1.80	602.4	4.07	59.8	2.96
193.8	3.46	16.0	0.77	400.2	3.34	63.2	2.76
172.7	3.41	13.1	0.91	526.6	3.33	44.7	2.45
139.0	3.75	12.0	0.58	307.5	3.17	45.5	2.45
119.2	3.95	11.2	0.58	442.3	4.19	33.7	1.97
97.7	3.65	10.3	0.48	244.4	3.61	35.8	2.10
87.6	3.07	9.1	0.39	316.0	4.01		
68.3	3.26	6.0	0.18	168.5	3.20		
64.5	3.91	5.9	0.25	208.5	3.65		
54.7	2.83	4.3	0.07	125.5	4.48		
45.5	3.23	4.4	0.07	145.3	3.03		

SAMPLE TEMPERATURE: 4.0°C

INCUBATION TEMPERATURE: 5.5 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.81	RNA:	6.35	PHOSPHATE:	0.48
CARBON:	-	DNA:	3.93	NITRATE:	0.21
NITROGEN:	15.00	ATP:	0.866	SILICATE:	3.44
PROTEIN:	46.50			AMMONIA:	0.56

I	P	I	P	I	P	I	P
636.2	4.48	45.1	2.57	3.4	0.05	120.1	3.50
514.0	4.35	40.0	2.22	3.2	0.02	82.6	3.62
450.7	4.59	34.5	1.98	2.7	0.01	85.1	3.08
379.2	4.77	29.5	1.89	2.0	0.04	62.4	2.82
286.5	4.25	19.0	1.39	1.8	0.15	67.8	2.97
240.1	4.18	18.1	1.22	513.9	4.21	47.2	2.36
181.2	3.77	14.1	0.81	581.4	3.84	51.8	2.57
141.1	3.83	12.6	0.78	358.1	4.35	34.1	1.87
127.2	3.65	10.6	0.52	442.4	3.85	39.6	1.99
94.8	3.68	9.5	0.45	260.4	3.92		
90.2	3.95	8.4	0.30	326.5	4.08		
68.3	3.34	7.4	0.30	257.8	3.58		
67.4	3.71	4.8	0.07	143.2	3.68		
54.8	3.05	4.6	0.08	170.6	3.58		
48.9	3.50	4.0	0.02	109.5	3.68		

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 5.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.30	RNA:	4.88	PHOSPHATE:	0.46
CARBON:	-	DNA:	3.24	NITRATE:	0.29
NITROGEN:	14.00	ATP:	0.78	SILICATE:	4.29
PROTEIN:	35.2			AMMONIA:	1.48

379.2	4.30	32.0	1.59	2.4	0.00	75.7	3.91
316.0	4.50	29.9	1.63	1.7	0.03	81.3	3.50
269.6	3.94	20.2	0.81	1.8	0.06	52.7	2.68
235.9	4.84	18.1	0.74	568.7	3.52	66.6	2.76
176.9	4.45	13.9	0.50	463.4	3.95	43.4	2.39
139.0	3.81	12.2	0.51	547.7	3.38	49.7	2.77
130.6	3.47	10.3	0.24	374.9	4.13	32.9	1.71
94.8	3.92	9.8	0.25	442.4	3.94	34.8	1.59
96.9	3.98	7.7	0.13	278.1	3.89		
74.9	3.20	7.0	0.14	324.4	3.49		
69.5	3.19	4.5	0.03	193.8	4.58		
54.3	2.24	4.3	0.07	134.8	4.02		
51.8	2.33	3.5	0.03	149.6	4.04		

SAMPLE TEMPERATURE: 3.9°C

INCUBATION TEMPERATURE: 8.0 °C

INCUBATION TIME: 2 HRS.

	$mg\ m^{-3}$		$mg\ m^{-3}$		$mg\ at\text{-}m^{-3}$
CHLOROPHYLL:	2.12	RNA:	7.28	PHOSPHATE:	0.44
CARBON:	120.00	DNA:	2.82	NITRATE:	0.10
NITROGEN:	20.00	ATP:	0.864	SILICATE:	5.28
PROTEIN:	51.80			AMMONIA:	1.34

I	P	I	P	I	P	I	P
488.7	2.89	32.0	1.16	2.4	0.01	67.4	2.14
408.6	2.20	29.1	1.27	2.6	0.00	48.4	1.72
309.6	2.55	21.5	0.76	2.1	0.08	55.6	1.85
242.2	2.72	16.9	0.69	640.4	1.80	39.2	1.68
174.8	2.44	15.6	0.50	631.9	1.74	42.1	1.73
128.5	2.37	12.6	0.46	400.2	2.68	29.5	1.21
124.3	2.22	12.6	0.32	488.7	1.90	32.4	1.48
92.7	2.07	9.3	0.35	292.8	2.64		
85.1	1.96	9.7	0.18	387.6	2.90		
67.4	2.42	7.6	0.21	280.2	2.70		
64.0	2.58	6.3	0.08	160.1	3.06		
48.4	1.95	4.4	0.05	195.9	3.03		
38.8	2.05	4.6	0.05	114.6	2.77		
39.6	1.34	3.1	0.00	130.6	2.38		
36.6	1.38	3.5	0.00	64.0	2.35		

SAMPLE TEMPERATURE: 4.2 °C

	$mg\ m^{-3}$
CHLOROPHYLL:	2.00
CARBON:	-
NITROGEN:	19.00
PROTEIN:	55.20

INCUBATION TEMPERATURE: 8.2 °C

	$mg\ m^{-3}$
RNA:	16.60
DNA:	3.82
ATP:	0.714

INCUBATION TIME: 2 HRS.

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	0.50
NITRATE:	0.24
SILICATE:	5.81
AMMONIA:	0.97

480.3	3.44	43.0	2.34	3.5	0.01	153.8	2.77
396.0	3.44	39.2	1.86	3.5	0.00	109.5	2.57
347.6	3.13	37.1	1.65	2.7	0.00	107.4	2.89
269.6	3.32	29.5	1.34	2.6	0.00	71.6	2.87
265.4	3.07	23.6	1.60	2.3	0.00	72.9	2.55
231.7	2.68	19.0	0.86	2.2	0.03	56.9	2.45
185.4	2.75	13.1	0.77	615.1	2.47	54.3	2.29
149.6	3.44	13.9	0.46	452.9	2.69	44.7	1.49
126.4	3.18	10.1	0.50	307.5	3.52	33.3	1.40
109.5	2.98	10.9	0.28	377.1	2.89	28.6	1.30
99.8	2.87	8.2	0.31	244.4	2.63		
86.4	3.17	8.6	0.17	290.7	3.28		
75.8	2.24	6.5	0.20	185.4	3.46		

SAMPLE TEMPERATURE: 3.6 °C

INCUBATION TEMPERATURE: 6.8 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.98	RNA:	15.73	PHOSPHATE:	0.42
CARBON:	-	DNA:	2.89	NITRATE:	0.31
NITROGEN:	109.00	ATP:	1.119	SILICATE:	5.18
PROTEIN:	58.70			AMMONIA:	1.24

I	P	I	P	I	P	I	P
642.5	3.43	52.7	2.10	3.75	0.13	111.2	2.66
642.5	3.57	48.4	2.55	3.75	0.05	71.2	2.71
509.8	3.21	38.3	1.80	2.78	0.06	80.5	3.04
431.8	3.41	36.2	1.59	2.78	0.06	56.0	2.69
301.2	2.95	30.8	1.40	2.49	0.03	61.5	2.55
271.7	2.69	27.8	1.63	1.90	0.05	42.1	2.41
231.7	2.67	18.9	0.91	2.19	0.05	41.3	1.92
198.8	2.68	13.5	0.88	446.6	3.44	32.9	1.52
166.4	2.70	13.5	0.64	514.0	2.68	25.3	1.47
141.1	3.06	11.0	0.65	219.1	2.67		
126.4	2.68	10.3	0.39	275.9	2.89		
109.5	3.52	8.2	0.44	168.5	3.70		
118.0	2.63	7.6	0.27	204.3	2.83		
75.8	2.89	6.4	0.22	147.5	3.24		
63.2	2.98	4.8	0.12	99.0	2.82		

SAMPLE TEMPERATURE: 4.0 °C

INCUBATION TEMPERATURE: 5.2 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	2.27	RNA:	15.14	PHOSPHATE:	0.50
CARBON:	-	DNA:	2.48	NITRATE:	0.32
NITROGEN:	16.00	ATP:	0.57	SILICATE:	4.41
PROTEIN:	51.40			AMMONIA:	1.56

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
320.2	4.07	31.2	1.43	3.5	0.00	77.1	2.79
282.3	2.60	29.5	1.90	2.0	0.02	56.0	2.49
263.3	3.37	19.8	1.00	2.3	0.11	59.8	3.35
189.6	2.79	19.4	1.21	471.9	3.53	38.7	2.20
181.2	3.45	13.5	0.88	568.7	3.12	47.2	2.62
134.8	3.91	13.9	0.61	320.2	3.30	27.8	1.88
134.8	2.96	10.6	0.53	442.4	2.49	34.5	1.67
97.7	3.49	10.6	0.37	254.9	3.13		
96.0	3.12	8.7	0.28	292.8	2.93		
71.6	2.94	8.5	0.27	185.4	3.90		
69.5	2.82	5.7	0.11	219.1	2.71		
56.4	3.52	5.8	0.12	130.6	3.76		

SAMPLE TEMPERATURE: 3.4 °C

INCUBATION TEMPERATURE: 6.7 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.95	RNA:	13.59	PHOSPHATE:	0.54
CARBON:	-	DNA:	3.16	NITRATE:	0.26
NITROGEN:	18.00	ATP:	0.782	SILICATE:	2.23
PROTEIN:	55.20			AMMONIA:	2.26

I	P	I	P	I	P	I	P
589.8	4.16	41.3	2.05	4.0	0.00	76.6	3.54
484.5	3.85	40.0	1.68	3.0	0000	75.8	3.05
446.6	3.99	29.4	1.66	3.2	0.00	52.7	2.85
349.7	4.49	30.3	1.52	2.4	0.00	57.3	3.07
307.5	4.31	17.7	0.89	2.5	0.00	41.3	2.40
248.6	4.56	19.8	0.94	463.4	4.05	45.1	2.25
198.0	3.99	13.1	0.54	547.7	3.58	34.1	1.65
176.9	3.97	13.5	0.39	332.8	3.77	33.3	1.61
134.8	3.92	10.4	0.37	421.3	3.61		
101.9	4.11	10.4	0.35	303.3	4.36		
91.8	3.28	8.7	0.13	181.2	3.68		
75.0	3.45	8.8	0.21	231.7	4.08		
68.3	3.55	5.7	0.09	130.6	3.27		
56.0	3.51	5.9	0.03	160.1	3.66		
52.2	2.67	3.5	0.00	114.6	3.23		

SAMPLE TEMPERATURE: 3.9 °C

INCUBATION TEMPERATURE: 8.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.98	RNA:	15.98	PHOSPHATE:	0.46
CARBON:	-	DNA:	4.07	NITRATE:	0.25
NITROGEN:	28.00	ATP:	0.876	SILICATE:	5.61
PROTEIN:	61.70			AMMONIA:	1.80

307.6	4.39	33.0	1.44	3.7	0.00	94.8	3.03
294.9	4.29	33.3	1.93	3.1	0.00	66.1	3.59
235.9	3.47	23.2	0.96	2.6	0.00	70.8	3.43
210.6	3.54	21.9	0.92	480.3	3.66	46.3	2.00
172.7	3.44	16.9	0.68	615.1	3.38	50.6	2.68
151.6	3.65	15.6	0.68	345.5	4.41	36.3	1.77
120.1	3.83	14.3	0.44	463.4	4.03	38.8	1.95
114.6	3.12	12.4	0.35	282.3	3.54		
100.3	2.96	10.2	0.16	337.0	3.76		
90.1	2.88	9.3	0.18	204.3	3.87		
77.9	3.28	6.9	0.07	235.9	3.64		
64.4	2.44	6.3	0.03	160.1	3.78		
59.8	2.96	4.9	0.00	168.5	3.92		

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 8.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.76	RNA:	12.43	PHOSPHATE:	0.52
CARBON:	-	DNA:	1.79	NITRATE:	0.19
NITROGEN:	16.00	ATP:	0.806	SILICATE:	4.20
PROTEIN:	50.9			AMMONIA:	1.77

I	P	I	P	I	P	I	P
615.1	3.12	48.4	1.85	4.8	0.07	130.6	3.17
473.9	2.64	45.1	1.62	3.5	0.04	155.8	2.70
410.8	3.14	36.7	1.81	3.8	0.00	104.1	3.21
393.9	3.10	32.0	1.17	2.6	0.00	110.4	2.54
316.0	3.02	27.8	1.90	2.8	0.00	75.8	2.73
307.5	2.33	20.6	0.95	2.3	0.02	83.4	2.29
238.0	2.63	18.1	1.08	640.4	2.36	53.5	2.67
198.0	2.48	15.2	0.50	452.9	3.52	64.0	2.80
174.8	2.63	13.0	0.60	516.1	2.61	38.8	1.85
173.2	2.44	12.0	0.35	332.8	3.67	44.4	1.96
120.1	2.45	10.1	0.37	419.2	3.41	29.5	1.48
105.3	2.51	9.1	0.21	261.2	3.12	35.8	1.79
88.1	2.73	7.7	0.25	309.7	2.32		
78.4	2.50	6.5	0.06	193.8	2.64		
63.2	2.38	4.5	0.05	214.9	2.37		

SAMPLE TEMPERATURE: 4.0 °C

INCUBATION TEMPERATURE: 9.2 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	2.18	RNA:	15.44	PHOSPHATE:	0.52
CARBON:	-	DNA:	2.38	NITRATE:	0.26
NITROGEN:	16.00	ATP:	0.941	SILICATE:	6.38
PROTEIN:	44.30			AMMONIA:	1.68

406.6	4.12	32.0	1.78	2.5	0.01	57.7	2.61
307.5	3.72	27.4	1.78	2.7	0.07	52.7	2.89
286.5	3.43	20.2	1.33	2.2	0.04	42.1	1.86
248.6	3.56	15.6	1.03	467.6	2.75	40.9	2.24
217.0	3.87	14.7	0.82	547.7	3.34	33.3	2.16
168.5	3.36	11.8	0.82	332.8	3.46	32.4	1.69
149.6	3.78	11.8	0.63	442.4	3.72		
103.2	3.69	9.5	0.46	252.8	3.69		
87.6	4.25	9.1	0.38	189.6	3.65		
72.5	3.43	7.4	0.37	132.7	3.26		
64.0	3.67	5.9	0.18	145.3	3.24		
56.8	2.91	4.9	0.14	97.3	4.53		
48.5	3.59	4.3	0.12	109.1	4.08		

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 7.5 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.89	RNA:	13.69	PHOSPHATE:	0.50
CARBON:	-	DNA:	1.44	NITRATE:	0.25
NITROGEN:	16.00	ATP:	0.705	SILICATE:	5.21
PROTEIN:	49.4			AMMONIA:	1.66

I	P	I	P	I	P	I	P
606.7	3.48	72.5	3.13	4.4	0.14	153.8	2.99
640.4	3.29	51.4	3.52	4.0	0.22	92.7	3.47
488.7	3.74	54.3	2.66	2.8	0.11	109.5	3.08
410.8	3.66	38.8	2.08	2.7	0.14	61.1	3.02
400.2	3.63	41.7	2.23	1.9	0.05	68.3	3.24
309.7	4.72	26.5	3.32	1.8	0.07	51.4	2.87
261.2	3.34	30.3	2.00	1.6	0.06	53.1	3.71
250.7	4.45	15.2	1.18	1.5	0.08	37.9	2.59
193.8	4.68	17.3	1.27	410.7	3.59	46.3	2.55
187.5	3.83	11.9	0.80	510.3	3.48	29.0	1.94
139.0	4.66	12.6	1.04	417.1	4.06	33.3	2.00
134.0	3.34	9.0	0.65	240.1	3.56		
92.7	2.85	9.3	0.54	309.7	3.52		
94.8	2.88	6.8	0.48	189.6	3.21		
67.4	2.74	6.8	0.42	134.8	2.86		

SAMPLE TEMPERATURE: 3.4 °C

INCUBATION TEMPERATURE: 5.2 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.94
CARBON:	121.00
NITROGEN:	16.00
PROTEIN:	48.10

	mg m^{-3}
RNA:	10.09
DNA:	1.31
ATP:	0.73

	mg at-m^{-3}
PHOSPHATE:	0.50
NITRATE:	0.09
SILICATE:	3.09
AMMONIA:	1.10

442.4	4.80	43.8	1.94	3.1	0.02	88.5	3.98
328.6	3.73	35.8	1.63	3.4	0.00	64.0	2.54
324.4	2.92	32.0	1.62	2.6	0.01	64.0	2.92
240.1	3.67	22.8	1.04	2.7	0.01	47.6	2.68
226.6	3.21	19.8	1.12	442.4	2.82	44.2	2.09
198.0	3.65	15.6	0.75	568.7	2.77	38.3	1.81
158.9	4.09	14.3	0.67	337.0	4.49	32.0	1.81
143.2	2.73	11.6	0.54	455.0	4.46		
108.7	3.13	11.5	0.45	254.9	3.02		
94.4	3.47	9.9	0.33	303.3	2.79		
87.2	3.18	9.1	0.34	190.4	3.00		
73.3	3.60	6.1	0.13	223.3	2.91		
67.4	3.10	5.3	0.11	103.2	3.90		

SAMPLE TEMPERATURE: 2.2 °C

INCUBATION TEMPERATURE: 4.5 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.82	RNA:	8.74	PHOSPHATE:	0.56
CARBON:	126.00	DNA:	1.04	NITRATE:	0.16
NITROGEN:	15.00	ATP:	1.063	SILICATE:	1.69
PROTEIN:	71.60			AMMONIA:	1.06

I	P	I	P	I	P	I	P
484.5	3.66	31.2	1.70	2.5	0.03	67.4	3.75
429.7	3.98	23.6	1.04	2.4	0.02	45.5	2.46
282.3	3.70	18.5	1.41	539.3	3.32	51.4	2.56
244.4	3.71	16.0	0.69	606.7	3.71	34.1	1.95
160.9	3.18	13.5	0.78	446.6	3.43	39.6	2.76
141.1	3.32	12.2	0.52	265.4	3.70		
109.5	3.89	10.5	0.54	316.0	3.28		
108.3	3.19	9.1	0.29	227.5	3.55		
82.0	3.23	8.6	0.37	134.8	3.48		
79.2	2.83	5.7	0.09	164.3	3.48		
58.1	2.84	5.8	0.10	103.6	3.39		
58.1	2.52	4.6	0.45	118.8	3.57		
47.6	2.25	4.0	0.32	80.0	3.19		
43.0	2.25	3.7	0.01	89.7	3.20		
34.1	1.81	3.2	0.00	62.4	3.26		

SAMPLE TEMPERATURE: 2.5 °C

	mg m^{-3}
CHLOROPHYLL:	1.54
CARBON:	145.00
NITROGEN:	14.00
PROTEIN:	50.60

INCUBATION TEMPERATURE: 5.2 °C

	mg m^{-3}
RNA:	9.03
DNA:	1.96
ATP:	0.677

INCUBATION TIME: 2 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.52
NITRATE:	0.03
SILICATE:	1.28
AMMONIA:	1.58

480.3	3.47	46.3	2.01	4.1	0.03	86.4	2.67
446.6	2.77	43.8	2.03	3.2	0.00	63.2	2.53
349.7	2.67	35.4	1.42	3.2	0.00	69.5	2.51
286.5	2.83	32.0	1.33	2.6	0.00	46.3	2.09
231.7	2.82	20.2	0.90	2.6	0.02	48.4	1.90
202.2	3.11	18.9	1.03	484.5	3.23	35.0	1.57
176.9	2.53	15.6	0.67	560.3	3.08	35.0	1.80
139.0	2.72	13.5	0.66	345.5	3.00		
141.1	2.81	12.0	0.29	442.4	2.95		
110.4	2.72	10.5	0.36	311.8	3.02		
99.0	2.79	8.8	0.20	176.9	3.39		
82.2	2.25	8.7	0.22	227.5	2.99		
71.6	2.67	6.2	0.12	143.2	3.14		
63.2	2.03	6.0	0.06	155.9	2.89		

SAMPLE TEMPERATURE: 2.9°C

	$mg\ m^{-3}$
CHLOROPHYLL:	3.22
CARBON:	226.00
NITROGEN:	22.00
PROTEIN:	52.60

INCUBATION TEMPERATURE: 7.0°C

	$mg\ m^{-3}$
RNA:	12.42
DNA:	2.06
ATP:	0.88

INCUBATION TIME: 2 HRS.

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	1.82
NITRATE:	0.13
SILICATE:	1.36
AMMONIA:	1.86

I	P	I	P	I	P	I	P
480.3	2.31	48.4	1.79	4.4	0.04	143.2	2.39
446.6	3.10	38.3	1.49	4.1	0.03	153.8	2.33
362.3	2.53	37.1	1.49	3.5	0.02	106.2	2.35
316.0	3.10	29.9	1.20	3.3	0.01	113.7	2.32
251.9	2.44	27.0	1.28	2.8	0.00	77.9	2.48
231.3	2.41	16.4	0.70	2.7	0.00	84.3	2.62
174.8	2.80	17.7	0.77	619.3	2.22	55.2	2.89
160.1	2.21	13.1	0.53	431.8	2.60	58.1	2.42
128.5	2.76	13.1	0.54	505.6	2.36	41.3	2.25
117.1	3.52	11.2	0.34	307.5	2.62	44.7	2.25
102.8	3.15	10.1	0.32	425.5	3.09	31.2	1.51
84.3	2.96	8.2	0.13	223.3	3.56	35.0	1.53
75.0	2.37	8.4	0.26	313.9	2.32		
64.0	2.27	5.5	0.07	172.7	3.36		
54.8	1.83	5.5	0.10	219.1	3.19		

SAMPLE TEMPERATURE: 2.1°C

INCUBATION TEMPERATURE: 7.0°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.98	RNA:	7.57	PHOSPHATE:	0.58
CARBON:	109.00	DNA:	1.45	NITRATE:	0.22
NITROGEN:	14.00	ATP:	0.661	SILICATE:	2.29
PROTEIN:	37.00			AMMONIA:	1.60

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
315.1	3.60	24.9	1.48	2.6	0.00	70.4	3.25
266.3	3.24	15.2	1.11	2.4	0.01	83.4	2.92
231.3	3.55	13.9	0.90	606.7	3.00	48.9	2.90
178.2	3.07	12.4	0.61	404.4	3.33	60.7	2.70
163.5	3.21	11.2	0.70	522.4	3.55	40.4	2.43
100.3	2.95	9.6	0.47	277.6	3.17	42.6	2.16
89.3	3.72	9.2	0.33	357.7	3.03	30.3	1.69
80.0	3.09	7.6	0.25	201.8	3.18	33.7	1.73
64.5	3.04	7.7	0.43	278.5	3.14		
67.8	2.92	5.3	0.08	156.7	3.68		
47.6	2.31	4.6	0.11	203.1	3.08		
48.0	2.22	4.0	0.03	130.1	3.60		

SAMPLE TEMPERATURE: 2.8°C

INCUBATION TEMPERATURE: 7.2 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	2.40	RNA:	8.16	PHOSPHATE:	0.60
CARBON:	216.00	DNA:	1.94	NITRATE:	-
NITROGEN:	18.00	ATP:	1.147	SILICATE:	0.900
PROTEIN:	74.60			AMMONIA:	0.83

I	P	I	P	I	P	I	P
463.4	2.85	53.1	2.19	3.4	0.05	90.1	2.65
438.1	2.75	41.3	1.88	3.6	0.05	114.2	2.43
353.9	3.30	40.4	2.19	2.7	0.01	75.8	2.57
297.0	2.91	29.9	1.51	3.0	0.02	51.4	2.02
248.1	2.49	31.6	1.67	2.8	0.06	54.8	2.45
222.9	2.52	16.4	0.90	2.6	0.01	41.3	1.85
191.7	2.51	18.5	0.96	627.7	2.86	41.8	1.68
160.1	2.77	13.5	0.68	459.2	3.18	29.5	1.25
122.2	2.56	13.1	0.59	526.6	2.56	31.6	1.30
121.8	2.69	10.3	0.42	399.8	3.14		
86.8	2.59	10.2	0.44	235.5	2.97		
88.9	2.19	8.0	0.32	287.3	2.59		
70.4	2.19	8.2	0.25	214.9	2.75		
70.4	1.88	4.5	0.16	123.4	2.87		
57.7	2.19	5.1	0.10	149.6	2.51		

SAMPLE TEMPERATURE: 2.4°C

	mg m^{-3}
CHLOROPHYLL:	4.23
CARBON:	156.00
NITROGEN:	19.00
PROTEIN:	65.00

INCUBATION TEMPERATURE: 4.6 °C

	mg m^{-3}
RNA:	9.90
DNA:	1.86
ATP:	0.806

INCUBATION TIME: 2 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.50
NITRATE:	0.05
SILICATE:	1.81
AMMONIA:	1.35

337.0	2.29	18.5	0.70	2.6	0.00	50.6	1.86
223.3	2.12	17.3	0.63	455.0	2.50	36.6	1.35
170.6	1.95	14.3	0.39	547.7	2.07	39.6	1.59
155.9	1.94	12.6	0.44	332.8	2.66		
132.7	1.72	12.4	0.27	429.7	2.07		
110.8	1.84	11.0	0.36	263.3	2.25		
96.1	1.79	8.8	0.21	303.3	2.09		
80.9	1.56	8.9	0.25	198.0	2.18		
69.1	1.53	6.4	0.07	219.1	1.91		
66.1	1.48	6.2	0.12	155.8	2.32		
52.7	1.82	4.5	0.01	108.7	1.99		
48.4	1.35	4.1	0.02	84.3	2.10		
43.0	1.34	3.5	0.04	65.7	2.20		

SAMPLE TEMPERATURE: 3.0 °C

	mg m^{-3}
CHLOROPHYLL:	3.36
CARBON:	243.00
NITROGEN:	17.00
PROTEIN:	58.30

INCUBATION TEMPERATURE: 4.5 °C

	mg m^{-3}
RNA:	4.66
DNA:	0.82
ATP:	0.885

INCUBATION TIME: 3 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.47
NITRATE:	0.02
SILICATE:	0.67
AMMONIA:	2.42

I	P	I	P	I	P	I	P
562.6	3.39	44.2	1.96	3.8	0.02	75.0	2.87
463.4	3.33	42.1	2.03	2.7	0.01	61.1	2.27
383.4	3.37	33.7	1.66	3.1	0.00	57.7	2.14
337.0	3.27	32.9	1.37	2.4	0.00	45.1	1.91
299.1	2.70	19.4	0.90	463.5	3.30	46.3	2.15
227.5	3.18	21.9	1.06	556.1	2.83	36.7	1.35
223.3	3.18	13.5	0.48	332.8	2.65	33.7	1.71
162.2	2.61	13.9	0.50	244.4	2.60		
139.0	3.03	10.7	0.29	318.1	2.42		
113.7	2.65	11.2	0.31	210.6	2.66		
86.4	2.68	7.4	0.14	126.4	2.61		
83.4	2.28	7.8	0.20	151.7	2.86		
67.4	2.36	4.8	2.09	97.7	2.31		
56.0	2.02	5.6	0.09	103.2	2 31		
51.8	1.91	3.5	0.00	77.9	2.13		

SAMPLE TEMPERATURE: 4.0°C

INCUBATION TEMPERATURE: 6.9°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.38
CARBON:	131.00
NITROGEN:	12.00
PROTEIN:	20.40

	mg m^{-3}
RNA:	7.00
DNA:	2.65
ATP:	0.506

	mg at-m^{-3}
PHOSPHATE:	0.48
NITRATE:	0.05
SILICATE:	1.95
AMMONIA:	2.62

265.4	2.71	2.4	0.04
214.9	2.53		
147.5	2.35		
101.1	2.25		
77.9	1.88		
42.1	1.86		
33.3	1.66		
21.9	0.82		
14.7	0.76		
12.0	0.64		
9.1	0.81		
5.3	0.25		
4.6	0.16		

SAMPLE TEMPERATURE: 2.5°C INCUBATION TEMPERATURE: 4.0°C INCUBATION TIME: 0.5 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	2.73	RNA:	8.41	PHOSPHATE:	0.61
CARBON:	155.00	DNA:	2.01	NITRATE:	0.25
NITROGEN:	20.00	ATP:	0.918	SILICATE:	1.39
PROTEIN:	52.60			AMMONIA:	1.84

I	P	I	P	I	P	I	P
568.7	1.67	2.2	0.04				
383.4	2.18						
303.3	1.86						
219.1	1.85						
155.8	1.99						
54.8	1.88						
34.1	1.52						
21.1	0.90						
15.2	0.88						
12.0	0.62						
9.9	0.36						
6.5	0.15						
6.3	0.11						
3.8	0.08						
3.5	0.07						

SAMPLE TEMPERATURE: 2.5°C

INCUBATION TEMPERATURE: 4.0 °C

INCUBATION TIME: 1 HRS.

	mg m^{-3}
CHLOROPHYLL:	2.73
CARBON:	155.00
NITROGEN:	20.00
PROTEIN:	52.60

	mg m^{-3}
RNA:	8.41
DNA:	2.01
ATP:	0.918

	mg at-m^{-3}
PHOSPHATE:	0.61
NITRATE:	0.25
SILICATE:	1.39
AMMONIA:	1.84

257.0	2.15	2.6	0.08
191.7	2.13		
151.7	1.77		
111.6	1.71		
82.2	1.66		
65.3	1.92		
48.4	1.88		
34.1	1.67		
20.2	1.14		
15.2	0.81		
11.3	0.48		
8.8	0.43		
5.7	0.15		

SAMPLE TEMPERATURE: 2.5°C INCUBATION TEMPERATURE: 4.0°C INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	2.73	RNA:	8.41	PHOSPHATE:	0.61
CARBON:	155.00	DNA:	2.01	NITRATE:	0.25
NITROGEN:	20.00	ATP:	0.918	SILICATE:	1.39
PROTEIN:	52.60			AMMONIA:	1.84

I	P	I	P	I	P	I	P
573.0	1.48	3.3	0.14				
421.3	1.36	2.7	0.06				
290.7	1.25	2.3	0.04				
217.0	1.34						
153.8	1.68						
112.5	1.61						
67.4	1.62						
52.7	1.41						
40.0	1.68						
24.0	1.20						
17.3	0.77						
11.8	0.72						
9.7	0.68						
6.1	0.25						
4.6	0.21						

SAMPLE TEMPERATURE: 2.5 °C

INCUBATION TEMPERATURE: 4.0 °C

INCUBATION TIME: 4 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	2.73	RNA:	8.41	PHOSPHATE:	0.61
CARBON:	155.00	DNA:	2.01	NITRATE:	0.25
NITROGEN:	52.60	ATP:	0.918	SILICATE:	1.39
PROTEIN:				AMMONIA:	1.84

305.4	1.84
187.5	1.88
86.4	1.62
70.4	1.92
52.7	1.76
29.1	1.22
17.7	0.94
13.1	0.66
9.7	0.41
7.8	0.25
4.3	0.13
3.5	0.05
2.7	0.40

SAMPLE TEMPERATURE: 0.5 °C

INCUBATION TEMPERATURE: 2.6°C

INCUBATION TIME: 0.5 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	5.86	RNA:	4.86	PHOSPHATE:	0.66
CARBON:	-	DNA:	2.01	NITRATE:	1.67
NITROGEN:	22.00	ATP:	1.122	SILICATE:	3.77
PROTEIN:	83.40			AMMONIA:	3.10

I	P	I	P	I	P	I	P
634.1	0.72	2.3	0.03				
417.1	1.00	2.1	0.04				
322.3	1.12						
231.7	1.10						
122.2	1.20						
75.8	1.20						
65.3	0.89						
54.8	0.98						
19.4	0.58						
13.9	0.58						
10.3	0.39						
7.6	0.20						
4.3	0.14						
3.7	0.05						
2.7	0.05						

SAMPLE TEMPERATURE: 0.5 °C

INCUBATION TEMPERATURE: 2.6°C

INCUBATION TIME: 1 HRS.

	$mg\ m^{-3}$
CHLOROPHYLL:	5.86
CARBON:	-
NITROGEN:	22.00
PROTEIN:	83.40

	$mg\ m^{-3}$
RNA:	4.86
DNA:	2.01
ATP:	1.122

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	0.66
NITRATE:	1.67
SILICATE:	3.77
AMMONIA:	3.10

328.6	1.15	2.0	0.04
210.6	1.61		
172.7	1.80		
101.1	1.75		
59.0	1.24		
41.7	1.64		
30.3	1.50		
18.9	0.65		
14.3	0.49		
10.9	0.36		
8.7	0.33		
6.3	0.13		
4.2	0.11		
3.3	0.09		

SAMPLE TEMPERATURE: 0.5 °C INCUBATION TEMPERATURE: 2.6 °C INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	5.86	RNA:	4.86	PHOSPHATE:	0.66
CARBON:	-	DNA:	2.01	NITRATE:	1.67
NITROGEN:	22.00	ATP:	1.122	SILICATE:	3.77
PROTEIN:	83.40			AMMONIA:	3.10

I	P	I	P	I	P	I	P
547.7	1.03						
421.3	1.67						
320.3	1.75						
219.1	1.83						
107.4	1.12						
84.3	1.49						
63.2	1.32						
37.9	1.01						
24.4	0.88						
11.4	0.55						
8.6	0.40						
6.0	0.26						
4.0	0.15						
3.5	0.10						
2.7	0.09						

SAMPLE TEMPERATURE: 0.5 °C

INCUBATION TEMPERATURE: 2.6°C

INCUBATION TIME: 4 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	5.86	RNA:	4.86	PHOSPHATE:	0.66
CARBON:	-	DNA:	2.01	NITRATE:	1.67
NITROGEN:	22.00	ATP:	1.122	SILICATE:	3.77
PROTEIN:	83.40			AMMONIA:	3.10

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52.7	2.25
463.4	2.04	32.4	2.46	3.20	.02	36.7	1.88
379.2	1.88	30.3	1.69	2.36	.02	39.2	2.09
311.8	1.99	24.0	0.97	2.44	.01	28.6	1.45
210.6	1.88	20.6	1.18	463.4	2.00	32.4	2.04
202.2	2.06	13.9	0.77	526.6	1.83		
164.3	1.56	12.6	0.80	421.3	1.68		
139.0	2.06	10.3	0.79	244.4	1.98		
118.7	2.06	10.1	0.66	299.1	2.18		
101.1	2.39	7.0	0.38	181.2	1.94		
86.4	1.92	7.4	0.52	202.2	1.65		
69.5	1.72	4.6	0.31	130.6	2.24		
63.2	1.92	5.3	0.19	92.7	1.74		
54.8	2.00	3.6	0.14	67.4	1.74		
46.3	2.14	3.9	0.12	48.4	2.48		

SAMPLE TEMPERATURE: 2.7°C

INCUBATION TEMPERATURE: 3.3°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.60	RNA:	6.55	PHOSPHATE:	0.51
CARBON:	-	DNA:	3.44	NITRATE:	0.04
NITROGEN:	16.00	ATP:	0.395	SILICATE:	1.31
PROTEIN:	24.60			AMMONIA:	1.14

I	P	I	P	I	P	I	P
568.8	1.49	27.8	1.04	463.4	2.01	40.0	1.80
526.6	1.31	22.3	0.80	535.0	1.68	31.2	1.60
381.3	1.98	22.3	0.96	343.4	2.18	29.1	1.24
332.8	2.07	18.5	0.63	408.6	1.34		
290.7	1.57	9.3	0.44	250.7	2.10		
198.0	1.85	10.9	0.42	290.7	2.12		
94.8	1.61	7.4	0.26	189.6	2.07		
110.8	1.86	8.2	0.31	198.0	2.16		
73.7	2.25	6.1	0.09	147.5	2.12		
78.8	2.10	6.3	0.09	117.1	1.90		
56.9	1.30	4.8	0.14	75.8	1.90		
59.0	1.67	4.3	0.06	96.9	1.70		
40.0	1.53	3.4	0.01	54.8	1.93		
44.2	1.57	3.6	0.03	59.0	1.63		
28.6	1.39	3.2	0.07	44.2	1.83		

SAMPLE TEMPERATURE: 1.5°C

	$mg\ m^{-3}$
CHLOROPHYLL:	2.10
CARBON:	-
NITROGEN:	16.00
PROTEIN:	27.50

INCUBATION TEMPERATURE: 3.5 °C

	$mg\ m^{-3}$
RNA:	6.92
DNA:	4.07
ATP:	0.388

INCUBATION TIME: 2 HRS.

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	0.61
NITRATE:	0.34
SILICATE:	1.51
AMMONIA:	0.77

509.8	2.93	50.6	2.35	3.1	0.00	88.5	3.00
442.4	3.17	41.7	2.44	3.0	0.00	61.1	2.40
383.4	2.52	31.2	2.23	2.5	0.03	64.0	2.12
309.7	2.71	27.0	0.93	2.2	0.05	50.6	1.94
277.2	2.98	24.0	1.08	522.4	2.75	50.6	1.91
223.3	2.48	16.0	0.84	615.1	3.50	39.2	1.88
185.4	2.77	13.5	0.82	442.4	2.85	35.0	1.90
150.4	3.37	11.6	0.48	259.1	2.75		
147.0	2.49	9.9	0.67	324.4	3.34		
108.3	2.85	9.4	0.28	202.2	2.95		
104.5	3.15	8.5	0.35	231.7	3.73		
84.3	2.90	6.6	0.09	147.5	2.89		
88.1	2.62	6.4	0.18	168.5	3.59		
59.0	2.98	4.2	0.07	104.5	3.43		

SAMPLE TEMPERATURE: 3.5°C

INCUBATION TEMPERATURE: 6.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.20
CARBON:	-
NITROGEN:	14.00
PROTEIN:	40.30

	mg m^{-3}
RNA:	6.51
DNA:	4.21
ATP:	0.253

	mg at-m^{-3}
PHOSPHATE:	0.54
NITRATE:	0.08
SILICATE:	2.75
AMMONIA:	1.66

I	P	I	P	I	P	I	P
631.9	1.97	24.9	1.25	2.5	0.00	63.2	1.63
484.5	1.93	18.1	0.73	2.2	0.00	26.5	1.32
442.4	1.74	20.6	1.04	452.9	2.12	32.0	1.46
324.4	1.81	11.4	0.66	313.9	2.26		
252.8	2.05	13.1	0.55	442.4	1.88		
185.4	2.19	8.6	0.34	240.2	2.55		
179.1	1.95	10.7	0.38	290.7	1.88		
126.4	1.82	7.4	0.28	191.7	2.46		
115.9	1.81	8.8	0.28	126.5	2.41		
84.3	1.90	5.9	0.94	147.5	2.08		
61.1	1.62	5.9	0.13	94.8	1.95		
48.4	1.48	4.8	0.01	111.6	2.58		
45.9	1.38	4.6	0.03	80.0	2.31		
35.8	1.16	2.9	0.00	52.7	1.91		
26.1	1.41	2.6	0.00	37.1	1.63		

SAMPLE TEMPERATURE: 3.2°C

INCUBATION TEMPERATURE: 6.0°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.28	RNA:	5.19	PHOSPHATE:	0.54
CARBON:	-	DNA:	3.29	NITRATE:	0.04
NITROGEN:	14.00	ATP:	0.082	SILICATE:	2.44
PROTEIN:	19.60			AMMONIA:	3.15

446.6	2.37	19.8	1.15	2.2	0.02	39.6	2.62
400.2	2.29	18.9	0.93	648.8	2.29	38.3	2.07
252.8	2.68	13.9	0.74	648.8	1.83	29.9	1.41
269.6	2.25	13.1	0.66	316.0	2.48	32.0	1.69
225.4	2.58	10.7	0.37	421.3	2.40		
130.6	2.21	10.7	0.33	292.8	2.08		
96.9	2.64	8.8	0.23	164.3	2.49		
69.5	2.38	8.1	0.25	200.1	2.69		
67.5	2.73	5.8	0.16	130.6	2.77		
54.8	2.46	5.5	0.12	88.5	2.46		
51.8	2.52	4.2	0.04	93.1	2.46		
40.0	2.15	3.8	0.05	67.4	1.94		
40.1	1.89	3.2	0.01	69.5	1.95		

SAMPLE TEMPERATURE: 3.2°C

INCUBATION TEMPERATURE: 5.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.34
CARBON:	-
NITROGEN:	10.00
PROTEIN:	20.40

	mg m^{-3}
RNA:	7.85
DNA:	3.98
ATP:	0.422

	mg at-m^{-3}
PHOSPHATE:	0.52
NITRATE:	-
SILICATE:	2.70
AMMONIA:	0.66

I	P	I	P	I	P	I	P
589.8	1.69	44.2	1.50	3.0	0.03	86.4	2.32
383.4	2.31	39.2	1.18	2.3	0.00	50.6	1.94
341.2	2.90	31.6	1.45	2.2	0.00	56.9	2.16
278.1	3.18	28.6	1.26	2.0	0.00	35.8	1.97
257.0	2.70	18.5	0.71	1.9	0.00	39.2	1.70
193.8	2.74	17.3	0.85	421.3	2.59	28.6	1.66
191.7	2.51	13.9	0.55	505.6	2.43		
132.7	3.17	11.6	0.50	379.2	2.41		
132.7	2.35	9.9	0.33	235.9	2.47		
99.0	3.04	9.7	0.34	278.0	2.83		
94.8	2.66	6.5	0.13	172.7	2.39		
71.6	2.85	6.3	0.12	195.9	2.97		
71.2	2.47	4.4	0.10	130.6	3.33		
56.9	1.95	4.1	0.07	88.5	2.97		
53.9	1.79	3.1	0.04	68.7	2.52		

SAMPLE TEMPERATURE: 3.7°C

INCUBATION TEMPERATURE: 5.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.16	RNA:	7.83	PHOSPHATE:	0.54
CARBON:	-	DNA:	3.75	NITRATE:	-
NITROGEN:	14.00	ATP:	0.412	SILICATE:	2.58
PROTEIN:	30.6			AMMONIA:	1.44

425.5	3.29	19.8	1.06	2.2	0.05	48.9	2.48
358.1	3.36	17.3	1.20	642.5	2.79	40.0	1.78
330.7	3.06	12.6	0.84	537.2	2.63	40.0	1.84
223.3	3.06	11.8	0.61	328.6	2.44	28.6	1.43
193.8	2.51	11.0	0.41	429.7	2.27	28.2	1.89
155.9	2.85	10.7	0.52	223.3	2.41	77.9	2.95
134.8	2.61	8.6	0.30	271.7	2.71		
113.7	3.20	7.8	0.24	155.8	2.95		
75.4	2.52	5.7	0.13	202.2	2.66		
55.2	2.35	5.7	0.11	113.7	2.77		
51.4	2.56	4.0	0.09	147.5	2.35		
40.9	1.90	3.8	0.11	84.3	2.38		
37.9	2.00	3.1	0.02	100.3	3.00		

SAMPLE TEMPERATURE: 2.5°C

	$mg\ m^{-3}$
CHLOROPHYLL:	1.28
CARBON:	-
NITROGEN:	12.00
PROTEIN:	29.20

INCUBATION TEMPERATURE: 4.0°C

	$mg\ m^{-3}$
RNA:	6.92
DNA:	2.91
ATP:	0.62

INCUBATION TIME: 2 HRS.

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	0.57
NITRATE:	0.04
SILICATE:	1.38
AMMONIA:	2.29

I	P	I	P	I	P	I	P
589.8	2.04	25.7	1.20	2.4	0.02	46.3	1.35
463.4	2.20	26.1	0.94	2.0	0.00	44.2	1.20
480.3	1.82	19.8	0.74	1.9	0.04	28.2	1.26
378.7	1.73	20.2	1.03	446.6	2.51	32.9	1.15
328.6	1.57	12.4	0.58	547.7	2.47		
246.5	1.72	13.3	0.52	337.0	1.51		
240.1	1.93	9.7	0.43	421.3	2.24		
185.4	1.87	10.3	0.35	250.7	2.07		
92.3	2.20	7.9	0.36	334.9	1.77		
75.8	1.65	7.5	0.35	189.2	2.30		
65.3	1.48	6.1	0.18	168.5	2.13		
54.8	1.37	5.7	0.18	99.0	1.78		
50.6	1.37	3.7	0.08	76.7	2.10		
36.7	1.30	3.5	0.05	88.5	1.50		
37.5	1.51	2.4	0.01	59.0	2.12		

SAMPLE TEMPERATURE: 2.4°C

INCUBATION TEMPERATURE: 4.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.68	RNA:	3.83	PHOSPHATE:	0.600
CARBON:	-	DNA:	1.83	NITRATE:	0.12
NITROGEN:	15.00	ATP:	0.266	SILICATE:	1.34
PROTEIN:	35.10			AMMONIA:	1.65

438.1	2.24	16.4	0.78	505.6	1.87	28.6	1.65
347.6	1.63	10.5	0.50	358.1	1.98	29.5	1.32
278.9	1.76	10.7	0.38	404.4	2.29		
223.3	1.96	8.4	0.35	284.4	2.34		
122.2	1.46	7.9	0.31	353.9	2.07		
123.0	1.84	5.6	0.20	217.0	1.73		
83.4	1.98	4.8	0.28	240.1	1.88		
59.0	1.45	4.2	0.07	143.2	1.97		
52.7	1.35	4.0	0.10	158.0	1.84		
41.7	1.41	2.8	0.04	103.2	2.15		
37.5	1.52	2.9	0.10	78.8	1.51		
30.8	1.46	1.9	0.01	83.4	1.65		
26.5	1.03	1.9	0.01	57.7	1.48		

SAMPLE TEMPERATURE: 3.5°C

INCUBATION TEMPERATURE: 5.5 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.12	RNA:	5.07	PHOSPHATE:	0.56
CARBON:	156.00	DNA:	4.99	NITRATE:	0.05
NITROGEN:	14.00	ATP:	0.312	SILICATE:	1.76
PROTEIN:	18.40			AMMONIA:	2.14

I	P	I	P	I	P	I	P
648.8	1.73	40.0	1.64	2.7	0.00	96.9	1.85
568.7	2.28	28.2	1.68	2.7	0.00	70.4	1.81
488.7	2.72	27.8	1.12	2.0	0.00	72.9	1.81
429.7	2.76	21.9	0.79	2.2	0.02	52.2	1.55
353.9	2.95	21.5	0.72	598.2	1.10	54.7	1.64
278.1	2.77	13.1	0.54	501.3	2.19	40.0	1.34
223.3	2.68	12.6	0.68	522.4	1.87	46.3	1.87
210.6	2.13	10.1	0.35	332.8	2.01	27.4	1.38
160.1	2.02	10.0	0.36	404.4	2.74	34.1	1.30
118.0	1.88	8.2	0.18	265.4	2.21		
107.4	1.86	7.8	0.21	320.2	1.78		
75.8	1.83	6.1	0.08	204.3	2.02		
69.5	2.00	6.4	0.15	231.7	1.76		
59.0	1.91	3.6	0.04	126.4	2.38		
40.0	1.64	4.0	0.01	147.5	2.17		

SAMPLE TEMPERATURE: 2.2°C

INCUBATION TEMPERATURE: 4.8°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.51	RNA:	5.69	PHOSPHATE:	0.66
CARBON:	135.00	DNA:	5.44	NITRATE:	0.04
NITROGEN:	14.00	ATP:	0.255	SILICATE:	1.17
PROTEIN:	28.20			AMMONIA:	2.18

452.9	2.52	39.6	1.37	3.4	0.03	53.1	2.12
442.4	2.31	34.5	1.65	2.6	0.00	64.5	2.07
347.6	2.48	26.5	1.36	2.7	0.05	39.2	1.83
294.9	2.46	26.5	1.66	2.0	0.01	43.4	1.58
250.7	2.37	18.5	1.07	2.2	0.03	29.9	1.42
204.3	2.14	16.4	1.17	452.9	2.28	34.1	1.31
198.0	2.61	13.1	0.82	421.3	1.69		
132.7	2.62	12.0	0.69	242.2	2.00		
136.9	2.48	9.7	0.52	176.9	1.89		
97.7	1.85	9.1	0.46	212.8	2.11		
98.2	2.75	7.2	0.35	132.7	2.39		
75.0	1.93	6.6	0.18	149.6	2.64		
69.1	1.86	5.1	0.36	92.7	1.74		

SAMPLE TEMPERATURE: 2.0°C

INCUBATION TEMPERATURE: 4.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.66	RNA:	5.20	PHOSPHATE:	0.56
CARBON:	81.00	DNA:	5.85	NITRATE:	-
NITROGEN:	13.00	ATP:	0.548	SILICATE:	1.28
PROTEIN:	43.60			AMMONIA:	2.33

I	P	I	P	I	P	I	P
621.4	1.52	50.6	1.96	4.0	0.12	214.9	2.53
551.9	3.01	49.3	3.09	3.3	0.03	143.2	1.96
431.8	2.91	37.5	1.73	3.0	0.09	157.9	1.81
421.3	3.19	33.7	1.97	2.6	0.02	99.8	3.16
316.0	2.69	27.4	1.87	2.4	0.00	106.2	1.98
286.5	2.82	23.6	1.87	1.9	0.00	69.5	3.02
235.9	2.86	16.1	1.30	1.9	0.07	77.1	2.06
176.9	2.13	14.7	0.94	631.9	2.10	53.1	2.27
170.6	2.06	11.8	0.56	484.5	2.67	55.6	2.05
130.6	2.04	9.9	0.65	516.1	2.10	40.9	2.17
126.4	3.00	9.3	0.53	347.6	3.47	43.4	1.49
91.8	3.08	7.8	0.40	383.4	1.95	29.0	1.70
87.2	2.62	7.6	0.25	252.8	3.54	30.3	1.56
65.3	3.00	6.2	0.36	299.1	3.37		
67.0	2.40	4.6	0.07	198.0	1.85		

SAMPLE TEMPERATURE: 3.5°C

	$mg\ m^{-3}$
CHLOROPHYLL:	1.18
CARBON:	127.00
NITROGEN:	24.00
PROTEIN:	23.60

INCUBATION TEMPERATURE: 4.9°C

	$mg\ m^{-3}$
RNA:	6.43
DNA:	5.55
ATP:	0.282

INCUBATION TIME: 2 HRS.

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	0.55
NITRATE:	0.14
SILICATE:	2.30
AMMONIA:	2.13

421.3	1.97	34.1	1.87	3.1	0.00	107.4	1.59
284.4	3.24	28.2	1.18	2.6	0.00	53.9	1.76
275.9	1.83	25.7	1.21	2.4	0.00	56.9	1.89
242.2	1.64	17.3	0.57	2.0	0.03	40.4	1.48
204.3	1.95	15.6	0.71	631.9	2.14	41.3	1.44
181.2	1.76	13.5	0.54	495.0	3.03	31.2	1.42
126.4	1.97	11.8	0.50	484.5	2.27	30.3	1.43
109.5	1.89	9.8	0.39	345.5	3.03		
95.2	2.29	9.1	0.44	412.9	2.31		
82.6	1.91	7.8	0.31	265.4	2.58		
75.8	2.25	7.2	0.27	189.6	2.84		
65.7	2.07	5.3	0.03	244.4	2.56		
51.8	1.61	4.9	0.05	139.0	2.05		

SAMPLE TEMPERATURE: 3.0°C

INCUBATION TEMPERATURE: 4.0°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.53	RNA:	5.94	PHOSPHATE:	0.52
CARBON:	49.00	DNA:	5.40	NITRATE:	-
NITROGEN:	11.00	ATP:	0.398	SILICATE:	1.53
PROTEIN:	25.30			AMMONIA:	1.20

I	P	I	P	I	P	I	P
516.1	1.87	32.4	1.62	2.8	0.01	73.7	1.83
442.4	2.28	25.3	1.09	2.5	0.03	75.8	1.83
298.3	2.25	26.1	1.22	2.3	0.01	57.7	2.03
235.9	2.37	19.0	0.99	1.9	0.00	54.3	2.06
214.9	2.58	18.5	0.79	589.8	1.68	43.4	1.85
172.7	2.50	10.7	0.57	501.3	2.15	40.0	1.99
143.2	2.08	11.4	0.56	330.7	2.32	30.3	1.44
126.4	1.89	9.0	0.42	431.8	2.20	27.8	1.51
94.4	2.28	9.1	0.44	257.8	2.15		
83.0	2.61	6.8	0.41	322.3	2.09		
66.1	1.87	7.0	0.26	181.2	2.58		
61.9	2.45	5.3	0.10	139.0	1.74		
59.0	2.35	5.4	0.07	158.0	1.79		
61.1	1.70	3.4	0.01	94.8	1.72		
32.0	1.62	3.3	0.00	110.4	1.85		

SAMPLE TEMPERATURE: 2.5°C

INCUBATION TEMPERATURE: 4.0°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.51	RNA:	6.68	PHOSPHATE:	0.54
CARBON:	-	DNA:	4.94	NITRATE:	0.06
NITROGEN:	-	ATP:	0.522	SILICATE:	1.19
PROTEIN:	25.30			AMMONIA:	1.14

429.7	2.28	24.0	1.23	2.7	0.00	36.2	2.30
396.0	3.46	24.4	1.40	2.0	0.00	37.1	2.52
273.8	2.34	17.3	0.85	2.0	0.01	28.2	1.90
281.4	3.11	16.4	1.33	631.9	2.40	27.4	1.60
249.4	2.39	11.6	0.61	455.0	3.12		
179.1	2.50	9.9	0.52	488.7	2.99		
163.9	2.27	9.4	0.32	322.3	3.27		
112.9	1.98	7.5	0.30	412.9	2.27		
113.7	2.03	6.9	0.22	229.6	2.64		
64.8	2.07	5.7	0.25	324.4	2.34		
59.0	1.79	5.3	0.11	170.6	2.53		
44.2	2.06	4.6	0.07	198.0	2.71		
41.7	1.91	3.7	0.00	117.1	2.56		

SAMPLE TEMPERATURE: 4.2°C

INCUBATION TEMPERATURE: 6.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.05
CARBON:	186.00
NITROGEN:	15.00
PROTEIN:	40.60

	mg m^{-3}
RNA:	3.71
DNA:	3.94
ATP:	0.320

	mg at-m^{-3}
PHOSPHATE:	0.47
NITRATE:	0.05
SILICATE:	1.68
AMMONIA:	2.15

I	P	I	P	I	P	I	P
577.2	3.77	34.1	2.87	3.4	0.00	86.8	3.54
467.6	3.50	37.5	2.65	2.6	0.00	64.9	3.20
463.4	4.28	24.0	1.70	2.7	0.01	68.3	3.51
345.5	3.32	29.5	2.25	2.0	0.00	45.5	2.44
309.6	2.73	19.0	1.08	2.0	0.00	46.3	3.27
265.4	2.97	21.1	1.02	387.6	3.83	31.2	2.97
241.0	3.02	11.1	0.69	514.0	3.28	32.0	2.15
189.6	3.99	12.1	0.79	366.5	3.64	23.2	1.70
120.1	2.97	9.0	0.51	259.1	3.14	24.4	1.90
130.6	2.72	8.8	0.46	299.1	3.21		
97.0	2.39	6.6	0.28	172.7	3.96		
88.5	3.06	6.5	0.28	193.8	4.25		
64.5	2.70	5.1	0.03	124.3	3.58		
48.0	3.85	5.1	0.07	132.7	3.74		
48.4	3.50	3.3	0.00	84.3	3.76		

SAMPLE TEMPERATURE: 4.2°C

	mg m^{-3}
CHLOROPHYLL:	0.73
CARBON:	120.00
NITROGEN:	13.00
PROTEIN:	16.0

INCUBATION TEMPERATURE: 6.5°C

	mg m^{-3}
RNA:	5.68
DNA:	4.08
ATP:	0.316

INCUBATION TIME: 2 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.52
NITRATE:	0.08
SILICATE:	2.80
AMMONIA:	1.29

358.1	2.74	37.5	2.82	2.3	0.00	32.7	2.15
324.4	2.81	26.5	1.61	2.2	0.01	33.7	1.67
273.8	3.62	26.9	1.67	1.9	0.00	34.5	1.86
221.2	3.60	16.0	0.99	1.6	0.00	26.5	1.67
193.8	2.88	16.9	0.96	381.3	2.69	22.7	1.66
153.8	2.71	11.2	0.56	537.1	2.43		
128.5	3.50	11.6	0.57	212.8	2.53		
113.7	3.48	8.8	0.45	294.9	3.24		
101.1	2.94	8.8	0.42	143.2	2.43		
80.0	2.93	6.6	0.21	191.7	3.85		
70.3	3.13	6.6	0.28	105.3	2.73		
62.4	2.42	4.4	0.09	136.9	2.84		
53.1	1.96	4.2	0.12	77.9	2.94		

SAMPLE TEMPERATURE: 3.0°C

INCUBATION TEMPERATURE: 6.0°C

INCUBATION TIME: 4 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.41
CARBON:	126.00
NITROGEN:	10.00
PROTEIN:	33.30

	mg m^{-3}
RNA:	5.69
DNA:	5.28
ATP:	0.228

	mg at-m^{-3}
PHOSPHATE:	0.64
NITRATE:	0.03
SILICATE:	1.43
AMMONIA:	1.50

I	P	I	P	I	P	I	P
568.75	1.97	1.9	0.06				
421.3	2.69	1.4	0.02				
311.8	2.79	292.8	2.48				
193.8	2.70	219.1	2.57				
96.9	3.03	90.6	2.81				
63.2	2.96	75.8	2.74				
42.1	2.72	54.7	1.97				
34.1	2.46	39.2	2.01				
27.4	1.68	29.5	1.88				
17.7	1.01	21.9	1.20				
11.6	0.52						
8.0	0.38						
6.2	0.26						
4.2	0.12						
2.9	0.08						

SAMPLE TEMPERATURE: 2.5°C

	mg m^{-3}
CHLOROPHYLL:	1.51
CARBON:	103.00
NITROGEN:	12.00
PROTEIN:	20.60

INCUBATION TEMPERATURE: 3.8°C

	mg m^{-3}
RNA:	7.16
DNA:	2.41
ATP:	0.387

INCUBATION TIME: 4 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.51
NITRATE:	0.04
SILICATE:	1.56
AMMONIA:	0.83

[illegible]	[illegible]	[illegible]	[illegible]
324.4	2.89	474.0	3.86
158.0	3.87	343.4	3.56
111.6	3.94	252.8	3.95
79.2	3.41	183.3	4.11
63.2	2.51	117.9	2.84
50.6	1.91	90.6	2.64
36.7	1.73	66.6	3.10
20.6	1.22	60.2	2.93
12.6	0.69	44.2	2.58
9.7	0.58	34.1	1.68
7.6	0.48		
5.2	0.25		

SAMPLE TEMPERATURE: 3.0°C **INCUBATION TEMPERATURE:** 5.1°C **INCUBATION TIME:** 4 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.36	**RNA:**	7.17	**PHOSPHATE:**	0.60
CARBON:	74.00	**DNA:**	2.14	**NITRATE:**	0.07
NITROGEN:	12.00	**ATP:**	0.046	**SILICATE:**	1.76
PROTEIN:	17.60			**AMMONIA:**	0.79

I	P	I	P	I	P	I	P
568.7	2.48	42.1	3.98	3.1	0.14	67.4	2.59
484.5	2.89	41.3	3.35	2.8	0.04	46.3	2.77
484.5	3.90	28.2	1.88	2.5	0.06	57.7	3.65
337.0	3.42	28.6	1.68	2.2	0.02	32.9	3.14
328.6	3.30	17.7	1.47	2.3	0.07	41.3	2.17
252.8	4.03	16.9	1.47	480.3	3.29	26.5	2.03
235.9	3.98	11.8	0.96	526.6	3.01		
198.0	2.60	11.6	0.93	358.1	3.52		
168.5	4.00	9.3	0.64	273.8	3.27		
130.6	3.97	8.6	0.90	193.8	2.97		
122.1	2.97	6.5	0.50	223.3	3.76		
86.5	2.24	6.3	0.51	134.8	2.48		
69.5	2.83	4.8	0.26	160.1	2.78		
56.9	3.20	4.4	0.25	90.6	3.00		
54.8	2.29	3.2	0.15	103.2	3.38		

SAMPLE TEMPERATURE: 1.8°C

INCUBATION TEMPERATURE: 4.5°C

INCUBATION TIME: 4 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.93	RNA:	3.71	PHOSPHATE:	0.49
CARBON:	140.00	DNA:	2.07	NITRATE:	-
NITROGEN:	18.00	ATP:	0.120	SILICATE:	1.17
PROTEIN:	30.80			AMMONIA:	1.58

130.6	3.67	252.8	3.61
85.5	2.79	172.7	4.04
63.2	3.42	122.2	3.46
44.2	3.07	88.5	3.45
34.1	2.18	65.3	2.48
24.0	1.53	48.4	2.86
17.3	1.02	37.9	1.99
11.8	0.65	26.9	1.52
9.8	0.50		
7.0	0.31		
4.8	0.17		
3.1	0.15		

SAMPLE TEMPERATURE: 3.0°C

	$mg\ m^{-3}$
CHLOROPHYLL:	1.38
CARBON:	71.00
NITROGEN:	10.00
PROTEIN:	25.40

INCUBATION TEMPERATURE: 6.0°C

	$mg\ m^{-3}$
RNA:	7.58
DNA:	2.56
ATP:	0.080

INCUBATION TIME: 4 HRS.

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	0.61
NITRATE:	0.04
SILICATE:	1.76
AMMONIA:	0.70

I	P	I	P	I	P	I	P
589.8	2.00	2.1	0.07				
463.4	2.40	2.1	0.04				
345.5	2.90	334.9	2.48				
147.5	2.53	227.5	2.00				
101.1	2.30	176.9	2.51				
71.6	2.13	132.7	1.94				
50.6	2.25	86.4	2.13				
40.0	1.84	61.1	2.37				
27.4	1.36	46.3	1.66				
18.5	1.11	32.0	1.64				
12.6	0.67	22.8	1.39				
10.1	0.51						
7.6	0.38						
5.7	0.12						
3.5	0.06						

SAMPLE TEMPERATURE: 3.8°C

INCUBATION TEMPERATURE: 5.1 °C

INCUBATION TIME: 4 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.38
CARBON:	85.00
NITROGEN:	14.00
PROTEIN:	33.80

	mg m^{-3}
RNA:	6.10
DNA:	1.77
ATP:	0.391

	mg at-m^{-3}
PHOSPHATE:	0.55
NITRATE:	-
SILICATE:	2.74
AMMONIA:	1.17

421.3	4.72	35.4	1.82	2.7	0.00	50.6	3.35
337.0	4.51	29.5	2.49	2.4	0.04	38.3	3.22
278.0	5.01	22.3	1.35	2.1	0.02	39.2	2.74
231.7	3.83	19.8	1.30	568.7	5.80	28.6	1.94
227.5	4.46	15.6	1.09	341.2	4.67	31.2	1.92
181.1	4.15	13.9	0.90	269.6	4.60		
141.1	3.71	12.6	0.70	181.1	3.87		
126.4	3.34	10.3	0.53	210.6	4.34		
90.6	3.38	9.3	0.36	122.2	3.47		
83.0	3.04	7.7	0.46	139.0	4.09		
71.6	3.53	6.3	0.15	84.3	3.63		
59.0	2.91	5.3	0.17	96.9	3.85		
53.5	2.84	4.4	0.12	63.2	3.51		

SAMPLE TEMPERATURE: 4.7°C **INCUBATION TEMPERATURE:** 5.7°C **INCUBATION TIME:** 2 HRS.

	$mg\ m^{-3}$		$mg\ m^{-3}$		$mg\ at\text{-}m^{-3}$
CHLOROPHYLL:	0.96	**RNA:**	5.85	**PHOSPHATE:**	0.36
CARBON:	108.00	**DNA:**	2.41	**NITRATE:**	-
NITROGEN:	40.00	**ATP:**	0.243	**SILICATE:**	4.79
PROTEIN:	24.70			**AMMONIA:**	0.68

I	P	I	P	I	P	I	P
636.2	2.89	54.8	1.79	5.3	0.11	86.4	2.24
644.6	3.29	48.9	1.90	3.3	0.00	57.7	2.35
564.5	3.22	37.5	1.47	2.9	0.02	66.1	2.50
421.3	2.75	35.4	1.70	2.5	0.00	41.3	2.13
419.2	3.51	25.7	1.24	2.5	0.00	45.5	2.29
309.2	3.38	25.3	1.30	1.9	0.00	31.2	1.84
263.3	3.21	20.2	0.81	2.0	0.00	32.4	1.64
211.9	2.75	19.0	0.89	454.9	3.02	25.3	1.27
174.8	2.71	12.1	0.77	486.6	2.56	22.8	1.53
170.6	2.25	11.7	0.65	330.7	2.82		
134.8	2.50	9.6	0.28	294.9	2.13		
138.2	2.41	9.6	0.36	148.3	2.78		
103.2	2.44	7.0	0.28	193.8	2.17		
93.9	2.13	6.4	0.27	122.2	2.07		
69.1	2.52	5.5	0.03	75.8	2.45		

SAMPLE TEMPERATURE: 3.8°C

INCUBATION TEMPERATURE: 6.0°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.09
CARBON:	106.00
NITROGEN:	12.00
PROTEIN:	33.40

	mg m^{-3}
RNA:	5.11
DNA:	2.41
ATP:	0.668

	mg at-m^{-3}
PHOSPHATE:	0.53
NITRATE:	0.03
SILICATE:	2.57
AMMONIA:	1.71

307.5	1.97	23.6	1.13	1.8	0.00	66.1	2.58
231.7	1.88	23.2	0.86	1.9	0.00	52.7	2.16
210.6	1.79	16.9	0.79	648.8	1.70	47.6	2.34
176.9	1.87	13.0	0.53	455.0	2.86	40.0	1.93
149.6	2.38	10.7	0.63	471.8	2.01	37.9	2.20
126.8	1.83	9.9	0.40	303.3	2.76	27.0	1.48
93.5	2.15	8.6	0.36	320.2	2.70	29.9	1.50
92.7	1.59	7.2	0.21	267.5	2.37		
64.8	1.96	6.3	0.32	174.8	2.50		
54.8	2.21	5.1	0.08	193.8	2.95		
48.0	1.36	5.4	0.15	130.6	2.51		
40.0	1.92	2.9	0.03	132.7	2.48		

SAMPLE TEMPERATURE: 3.8°C

INCUBATION TEMPERATURE: 6.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.01
CARBON:	78.00
NITROGEN:	12.00
PROTEIN:	30.10

	mg m^{-3}
RNA:	5.60
DNA:	1.09
ATP:	0.504

	mg at-m^{-3}
PHOSPHATE:	0.58
NITRATE:	-
SILICATE:	2.07
AMMONIA:	1.78

I	P	I	P	I	P	I	P
631.9	2.18	43.8	1.72	5.1	0.11	133.9	1.68
526.6	2.53	38.3	1.46	3.7	0.04	160.9	2.51
471.9	1.91	33.7	1.69	3.4	0.03	92.7	2.25
415.0	2.16	29.1	1.35	2.7	0.01	103.2	2.30
341.2	2.50	24.9	1.11	2.5	0.00	70.4	2.03
250.7	2.28	23.2	1.33	2.1	0.00	48.4	2.05
235.9	2.06	18.5	0.91	1.9	0.02	52.7	2.14
168.5	2.09	17.7	0.93	503.4	1.91	37.5	1.80
168.5	1.67	11.7	0.60	511.9	1.82	40.4	1.54
121.3	1.58	10.9	0.51	326.5	2.26	30.3	1.25
109.1	1.84	9.9	0.40	398.1	1.83	29.5	1.48
82.1	1.86	8.4	0.47	278.0	1.85		
82.6	1.89	7.7	0.37	294.9	1.81		
61.9	1.87	6.1	0.28	200.1	2.10		
59.8	1.65	5.9	0.11	223.1	2.15		

SAMPLE TEMPERATURE: 4.5 °C

	mg m^{-3}
CHLOROPHYLL:	1.12
CARBON:	86.00
NITROGEN:	11.00
PROTEIN:	36.50

INCUBATION TEMPERATURE: 6.5°C

	mg m^{-3}
RNA:	4.86
DNA:	2.75
ATP:	0.503

INCUBATION TIME: 2 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.53
NITRATE:	-
SILICATE:	3.10
AMMONIA:	1.14

387.6	2.12	16.0	0.78	526.6	2.72	35.0	1.41
269.6	2.46	14.3	1.03	379.2	2.41	37.9	1.70
210.6	1.56	11.6	0.58	421.3	2.04	25.5	1.59
160.1	2.28	9.7	0.54	244.4	2.56	29.5	1.15
126.4	2.28	8.6	0.57	318.1	2.09	24.9	0.21
97.7	1.91	7.2	0.46	185.5	2.06		
71.6	1.58	7.2	0.36	221.2	2.40		
67.4	1.78	7.0	0.26	117.9	1.90		
63.2	2.15	4.6	0.14	147.5	1.71		
48.4	2.13	3.3	0.02	86.4	1.85		
42.1	1.64	3.2	0.18	105.3	1.79		
37.1	0.76	2.6	0.02	63.2	1.48		
31.6	1.60	2.5	0.03	80.0	1.95		
23.6	1.34	1.8	0.02	46.3	2.24		

SAMPLE TEMPERATURE: 4.0°C **INCUBATION TEMPERATURE:** 6.7 °C **INCUBATION TIME:** 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.16	RNA:	6.68	PHOSPHATE:	0.58
CARBON:	69.00	DNA:	2.29	NITRATE:	-
NITROGEN:	11.00	ATP:	0.519	SILICATE:	2.64
PROTEIN:	24.00			AMMONIA:	0.96

I	P	I	P	I	P	I	P
610.9	2.10	31.2	1.30	2.3	0.02	65.3	2.16
452.9	1.41	27.4	1.62	2.2	0.02	44.2	1.95
400.2	2.14	23.6	1.25	1.9	0.01	48.5	1.74
278.1	2.36	19.0	0.60	1.7	0.03	33.7	1.43
240.1	2.37	15.6	0.96	421.3	1.61	34.5	1.60
176.9	2.42	12.0	0.60	516.1	1.86	23.6	1.28
168.5	1.97	10.5	0.44	307.5	2.32	24.9	1.15
117.9	2.45	8.6	0.19	400.2	2.25		
111.6	1.87	8.0	0.37	227.5	1.83		
86.4	2.03	6.3	0.15	301.2	2.19		
77.9	2.48	5.8	0.19	172.7	2.72		
57.3	2.11	4.6	0.11	206.4	1.86		
42.1	1.61	4.0	0.11	139.0	2.00		
40.0	1.48	3.1	0.08	130.6	2.27		
34.1	1.52	2.6	0.07	94.8	2.07		

SAMPLE TEMPERATURE: 4.5°C

INCUBATION TEMPERATURE: 6.1°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.32
CARBON:	26.00
NITROGEN:	10.00
PROTEIN:	22.00

	mg m^{-3}
RNA:	8.03
DNA:	3.12
ATP:	0.405

	mg at-m^{-3}
PHOSPHATE:	0.57
NITRATE:	-
SILICATE:	1.81
AMMONIA:	0.58

217.0	3.11	13.9	0.84	442.4	2.54
195.9	3.98	10.1	0.69	526.6	2.50
117.9	3.16	9.8	0.45	301.2	3.27
113.7	3.05	8.2	0.34	370.7	3.07
86.4	2.83	8.2	0.44	176.9	3.66
109.5	4.04	6.3	0.29	130.6	3.16
63.2	2.82	6.1	0.21	82.2	3.34
59.0	3.65	4.4	0.04	56.9	2.46
42.1	2.20	4.4	0.04	67.4	2.72
41.3	2.09	3.1	0.00	40.4	2.43
29.9	1.63	3.0	0.00	46.3	2.88
29.0	1.90	2.2	0.00	31.2	1.96
23.2	1.71	2.1	0.00	35.4	2.11

SAMPLE TEMPERATURE: 4.8°C

INCUBATION TEMPERATURE: 6.1°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	0.82
CARBON:	72.00
NITROGEN:	12.00
PROTEIN:	26.20

	mg m^{-3}
RNA:	5.85
DNA:	1.80
ATP:	0.486

	mg at-m^{-3}
PHOSPHATE:	0.43
NITRATE:	-
SILICATE:	4.79
AMMONIA:	0.77

I	P	I	P	I	P	I	P
648.8	2.69	48.5	1.93	4.4	0.08	130.6	2.96
484.5	2.81	42.1	2.02	3.0	0.06	80.0	2.98
420.5	2.96	31.6	1.67	3.2	0.02	92.7	2.49
368.6	2.64	33.7	1.66	2.3	0.00	58.1	2.70
326.5	2.40	21.9	1.55	2.3	0.00	64.5	3.05
248.6	2.60	24.0	1.24	1.9	0.02	42.9	2.75
227.5	2.19	17.3	0.95	1.9	0.02	46.3	2.19
178.2	2.21	17.7	1.12	471.9	2.35	32.4	1.82
161.4	1.99	10.5	0.53	522.4	2.99	36.2	2.22
105.3	1.96	10.3	0.52	312.6	2.79	24.9	1.81
113.3	2.58	8.2	0.35	396.0	2.37	24.9	1.77
82.1	3.02	7.8	0.51	254.5	3.49		
84.2	2.58	6.8	0.23	288.6	3.14		
66.1	3.11	5.9	0.32	203.1	3.24		
59.8	2.76	4.6	0.07	118.8	2.51		

SAMPLE TEMPERATURE: 4.0°C

INCUBATION TEMPERATURE: 6.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.20
CARBON:	121.00
NITROGEN:	13.00
PROTEIN:	45.10

	mg m^{-3}
RNA:	4.29
DNA:	1.83
ATP:	0.634

	mg at-m^{-3}
PHOSPHATE:	0.51
NITRATE:	0.04
SILICATE:	3.23
AMMONIA:	0.69

420.5	4.68	31.6	2.09	3.1	0.10	80.0	2.77
368.6	3.73	33.7	2.38	2.3	0.03	92.7	3.02
326.5	2.67	21.9	1.88	2.3	0.02	58.1	3.21
248.6	2.74	24.0	1.82	1.9	0.03	64.4	2.73
227.5	2.27	17.3	0.97	1.8	0.00	43.0	2.50
178.2	3.85	17.7	1.23	471.9	3.05	46.0	3.82
161.4	2.94	10.5	0.75	522.4	2.58	32.4	3.20
105.3	4.31	10.3	0.66	312.6	4.25	36.2	2.23
113.3	3.59	8.2	0.38	396.0	4.23	24.8	1.91
82.1	2.93	7.8	0.57	254.5	3.68	24.9	2.11
84.3	3.02	6.8	0.28	288.6	3.66		
66.1	2.45	5.9	0.42	174.8	2.74		
59.8	2.53	4.6	0.12	203.1	4.35		

SAMPLE TEMPERATURE: 3.8°C

INCUBATION TEMPERATURE: 6.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.20
CARBON:	122.00
NITROGEN:	12.00
PROTEIN:	49.80

	mg m^{-3}
RNA:	5.56
DNA:	2.34
ATP:	0.488

	mg at-m^{-3}
PHOSPHATE:	0.54
NITRATE:	0.04
SILICATE:	2.96
AMMONIA:	1.11

I	P	I	P	I	P	I	P
585.6	1.45	47.2	1.88	5.8	0.07	172.7	1.95
589.8	1.97	47.2	2.18	3.4	0.04	99.0	2.43
467.6	1.85	36.6	1.05	3.8	0.01	111.2	1.53
358.1	2.36	35.4	1.25	2.6	0.00	71.6	1.84
356.0	1.90	30.8	1.03	2.7	0.00	87.2	1.84
282.3	2.46	26.1	1.01	2.1	0.01	56.5	1.68
261.2	1.78	23.2	0.92	2.3	0.04	62.4	1.98
168.5	1.57	18.5	0.66	619.3	1.50	42.1	1.70
164.3	1.51	13.5	0.56	406.6	1.65	44.7	1.69
115.0	2.51	12.2	0.59	429.7	1.40	32.0	1.54
112.9	2.72	9.6	0.37	271.7	2.52	32.9	1.62
85.9	2.32	9.7	0.37	320.2	1.63	24.0	1.28
86.8	1.56	7.3	0.11	202.2	2.45	24.4	1.92
65.7	1.49	7.8	0.14	240.1	2.07		
65.3	1.73	5.8	0.10	160.1	1.95		

SAMPLE TEMPERATURE: 3.5°C

	mg m^{-3}
CHLOROPHYLL:	1.30
CARBON:	69.00
NITROGEN:	11.00
PROTEIN:	48.80

INCUBATION TEMPERATURE: 6.0°C

	mg m^{-3}
RNA:	4.95
DNA:	1.78
ATP:	0.414

INCUBATION TIME: 2 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.40
NITRATE:	-
SILICATE:	1.90
AMMONIA:	0.74

337.0	1.72	24.9	1.36	1.8	0.02	24.4	1.33
269.6	2.02	14.3	0.72	1.9	0.02		
240.1	1.80	16.4	0.82	631.9	1.59		
151.7	2.12	9.7	0.73	442.4	1.60		
126.4	2.23	9.5	0.58	273.8	1.79		
109.5	1.61	7.6	0.38	341.2	1.68		
88.5	2.19	9.1	0.40	256.9	1.93		
75.8	1.61	7.0	0.35	160.1	2.17		
72.9	1.75	6.5	0.34	110.8	1.86		
58.9	1.81	4.4	0.10	132.7	1.66		
54.8	1.68	4.8	0.13	92.7	2.04		
42.1	1.35	3.1	0.04	46.3	1.74		

SAMPLE TEMPERATURE: 3.5 °C

INCUBATION TEMPERATURE: 5.7°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.18	RNA:	6.10	PHOSPHATE:	0.58
CARBON:	-	DNA:	2.00	NITRATE:	-
NITROGEN:	-	ATP:	0.458	SILICATE:	2.55
PROTEIN:	35.00			AMMONIA:	1.04

I	P	I	P	I	P	I	P
610.9	1.75	42.1	1.72	3.6	0.02	189.6	1.74
631.9	1.68	45.5	1.58	2.7	0.00	107.4	1.72
452.9	1.88	27.8	1.16	2.1	0.00	126.4	1.54
400.2	1.84	26.9	0.97	2.1	0.00	75.8	1.43
337.0	1.82	21.5	0.92	1.9	0.00	52.7	2.00
278.1	1.42	18.5	1.47	1.4	0.00	61.1	1.77
244.4	1.58	13.5	0.97	1.6	0.00	38.3	1.51
202.2	1.57	13.9	0.56	610.9	1.38	45.5	2.03
189.6	2.00	9.7	0.45	385.5	2.19	29.1	1.80
151.7	1.81	9.3	0.44	421.3	1.54	37.5	1.65
128.5	1.51	7.6	0.39	269.6	1.64	21.1	1.15
105.3	1.69	7.4	0.29	379.2	1.71		
90.6	1.76	5.7	0.16	210.6	2.29		
80.0	1.78	5.9	0.16	265.4	2.42		
64.5	2.10	3.6	0.02	160.1	1.68		

SAMPLE TEMPERATURE: 3.0°C

INCUBATION TEMPERATURE: 5.7°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.30
CARBON:	127.00
NITROGEN:	19.00
PROTEIN:	36.00

	mg m^{-3}
RNA:	6.31
DNA:	2.79
ATP:	0.602

	mg at-m^{-3}
PHOSPHATE:	0.49
NITRATE:	0.03
SILICATE:	2.42
AMMONIA:	0.89

400.2	2.79	34.5	2.32	1.9	0.00	42.1	2.65
353.9	2.88	28.2	1.36	1.4	0.01	52.7	2.59
290.7	2.63	25.3	1.43	1.5	0.08	32.9	2.59
269.6	2.14	14.8	0.89	568.7	2.36	42.1	2.66
231.7	2.67	13.0	0.82	568.7	1.84	26.1	3.00
168.5	2.96	9.4	0.64	366.5	2.31	30.0	2.51
130.6	1.99	8.9	0.62	452.9	2.65	19.0	1.59
122.2	1.97	7.2	0.39	265.4	2.16	20.6	2.11
86.4	2.28	6.7	0.61	202.2	2.54		
88.5	2.24	5.3	0.38	141.1	3.15		
59.0	1.79	3.6	0.25	168.5	3.36		
63.2	3.15	3.6	0.10	111.6	3.14		

SAMPLE TEMPERATURE: 3.0 °C

INCUBATION TEMPERATURE: 4.9 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.07
CARBON:	-
NITROGEN:	-
PROTEIN:	33.80

	mg m^{-3}
RNA:	5.44
DNA:	2.41
ATP:	0.286

	mg at-m^{-3}
PHOSPHATE:	0.56
NITRATE:	-
SILICATE:	2.43
AMMONIA:	1.05

I	P	I	P	I	P	I	P
615.1	1.82	40.0	1.28	3.3	0.04	93.9	1.98
471.9	2.28	36.7	1.26	3.0	0.03	118.0	1.83
421.3	1.98	29.5	1.00	2.2	0.02	69.1	1.66
353.9	1.90	29.5	0.98	2.2	0.01	77.1	2.26
278.1	2.43	25.4	1.04	1.7	0.02	56.5	1.87
244.4	1.67	19.0	0.67	1.8	0.03	59.8	2.38
191.7	1.78	19.0	0.58	610.9	1.63	39.6	1.55
147.5	1.55	11.0	0.55	570.9	1.55	43.8	1.52
136.9	1.77	11.8	0.47	378.7	2.10	32.0	1.43
101.1	2.19	8.8	0.31	433.9	1.59	35.4	1.30
103.6	2.39	9.1	0.27	252.4	1.82	23.6	1.23
81.7	1.66	6.5	0.19	318.1	1.84	26.5	1.16
70.8	1.63	6.5	0.23	231.7	1.99		
65.3	1.47	5.3	0.11	136.5	2.12		
46.3	1.48	4.8	0.07	155.0	2.26		

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 5.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.43
CARBON:	40.00
NITROGEN:	12.00
PROTEIN:	28.20

	mg m^{-3}
RNA:	4.70
DNA:	1.28
ATP:	0.484

	mg at-m^{-3}
PHOSPHATE:	0.48
NITRATE:	0.11
SILICATE:	2.76
AMMONIA:	1.21

391.8	2.12	32.4	1.39	2.7	0.00	124.3	1.93
324.4	1.90	26.1	0.78	2.4	0.03	80.0	1.56
252.8	1.76	24.0	0.86	2.0	0.00	53.9	1.67
212.8	1.89	19.0	0.75	2.1	0.07	75.8	1.57
176.9	1.65	17.7	0.51	610.8	1.38	54.3	1.43
145.3	1.65	11.4	0.43	589.8	1.82	32.0	1.53
130.6	1.97	11.8	0.34	374.9	1.75	32.9	1.43
105.3	1.83	8.8	0.34	459.2	1.61	22.8	1.19
96.9	1.39	9.7	0.28	326.5	2.08	24.9	1.20
71.6	1.91	6.7	0.18	347.6	1.58		
60.2	1.89	7.4	0.18	206.4	1.68		
54.8	1.51	5.7	0.08	229.6	1.89		

SAMPLE TEMPERATURE: 3.2 °C

INCUBATION TEMPERATURE: 5.5 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.20
CARBON:	62.00
NITROGEN:	11.00
PROTEIN:	31.80

	mg m^{-3}
RNA:	5.93
DNA:	1.68
ATP:	0.548

	mg at-m^{-3}
PHOSPHATE:	0.56
NITRATE:	0.09
SILICATE:	2.57
AMMONIA:	1.32

I	P	I	P	I	P	I	P
547.7	2.04	50.6	1.55	6.7	0.10	124.3	1.89
589.8	2.00	43.4	1.50	4.4	0.06	77.9	1.98
383.4	2.20	35.4	1.46	4.2	0.05	93.5	2.05
292.8	2.19	31.2	1.53	3.5	0.02	68.7	2.10
271.7	2.04	26.5	1.09	3.1	0.02	74.6	2.00
223.3	2.26	23.6	1.30	2.9	0.03	53.9	2.16
187.5	2.09	20.6	0.55	2.4	0.09	37.5	1.85
153.8	1.97	19.0	0.74	615.1	1.61	25.7	1.07
145.3	2.23	13.5	0.62	526.6	1.42	30.3	1.48
112.9	1.94	11.4	0.54	364.4	1.87		
103.2	2.20	10.1	0.44	417.1	2.01		
87.2	2.10	9.5	0.33	254.9	2.25		
77.9	2.12	8.1	0.19	227.5	1.84		
66.6	2.10	8.2	0.24	162.2	1.88		
56.9	1.84	6.4	0.10	176.9	2.04		

SAMPLE TEMPERATURE: 3.2 °C

INCUBATION TEMPERATURE: 6.5°C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.05	RNA:	5.44	PHOSPHATE:	0.56
CARBON:	63.00	DNA:	2.72	NITRATE:	-
NITROGEN:	10.00	ATP:	0.513	SILICATE:	2.66
PROTEIN:	31.70			AMMONIA:	1.78

410.8	2.24	35.4	1.43	2.6	0.00	69.5	2.13
353.9	1.81	36.7	1.30	2.5	0.00	82.1	2.42
290.7	2.08	27.8	1.15	1.8	0.08	55.6	2.01
269.6	2.01	26.5	1.38	2.2	0.00	63.2	2.33
219.1	2.20	13.5	0.80	589.8	1.50	40.9	1.95
189.6	2.02	14.7	0.71	410.8	2.14	45.5	1.86
160.1	1.87	11.8	0.45	442.3	2.25	30.3	1.51
132.7	1.64	9.9	0.71	269.6	2.27	38.8	1.75
111.6	2.48	9.5	0.35	345.5	2.93	22.3	1.54
103.2	1.75	6.5	0.19	204.3	2.83	27.8	1.08
82.2	2.15	6.1	0.33	242.2	3.36		
75.8	1.75	5.1	0.06				

SAMPLE TEMPERATURE: 4.0 °C

INCUBATION TEMPERATURE: 6.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.22	RNA:	6.43	PHOSPHATE:	0.56
CARBON:	-	DNA:	1.68	NITRATE:	0.10
NITROGEN:	-	ATP:	0.382	SILICATE:	3.30
PROTEIN:	35.10			AMMONIA:	2.76

I	P	I	P	I	P	I	P
516.1	2.13	46.3	1.73	3.5	0.00	80.0	2.65
589.8	2.17	34.1	1.34	3.3	0.01	52.7	2.75
431.8	1.96	34.1	1.54	2.3	0.01	56.9	2.16
311.8	2.04	28.2	1.48	2.2	0.03	37.9	2.44
294.9	2.98	26.5	1.26	2.0	0.01	46.3	2.09
219.1	2.58	16.0	0.78	1.9	0.03	27.4	1.60
210.6	2.07	16.0	0.86	589.8	2.80	32.4	1.56
185.4	2.57	10.3	0.51	396.0	2.53	22.8	1.91
147.5	2.90	9.9	0.52	421.3	2.00	24.0	1.77
103.2	2.37	8.2	0.54	297.4	2.73		
87.6	2.01	6.6	0.32	311.8	2.19		
70.8	2.11	7.8	0.21	202.2	2.57		
69.5	1.87	5.7	0.20	147.5	2.37		
56.0	2.90	4.6	0.06	107.4	2.28		
50.6	1.84	4.4	0.10	117.9	2.34		

SAMPLE TEMPERATURE: 3.7 °C

INCUBATION TEMPERATURE: 5.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.11
CARBON:	142.00
NITROGEN:	13.00
PROTEIN:	41.00

	mg m^{-3}
RNA:	8.53
DNA:	3.75
ATP:	0.429

	ng at-m^{-3}
PHOSPHATE:	0.58
NITRATE:	0.09
SILICATE:	3.00
AMMONIA:	0.92

400.2	2.17	29.1	1.73	2.8	0.01	24.2	2.12
328.6	2.37	28.2	1.13	2.4	0.03	61.1	2.20
278.1	2.17	16.4	0.75	2.4	0.00	63.2	2.08
273.8	1.93	15.6	0.72	589.8	2.65	44.2	2.04
212.8	1.94	11.2	0.58	341.2	2.83	46.3	1.80
189.6	2.40	10.5	0.62	273.8	2.78	36.7	1.50
164.3	1.92	10.3	0.32	231.7	2.64	35.8	1.56
126.4	2.26	9.1	0.24	320.2	1.98	27.0	1.11
117.9	2.04	7.4	0.27	172.7	2.13	27.8	1.16
88.5	2.45	7.8	0.18	214.9	2.52		
84.3	2.51	4.8	0.11	134.8	2.09		
65.3	2.09	4.6	0.06	147.5	2.18		

SAMPLE TEMPERATURE: 3.0 °C

INCUBATION TEMPERATURE: 5.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.01
CARBON:	36.00
NITROGEN:	8.00
PROTEIN:	25.80

	mg m^{-3}
RNA:	4.20
DNA:	3.75
ATP:	0.362

	mg at-m^{-3}
PHOSPHATE:	0.40
NITRATE:	0.04
SILICATE:	2.35
AMMONIA:	1.04

I	P	I	P	I	P	I	P
526.6	2.27	45.5	1.49	5.1	0.04	143.2	1.32
610.8	2.04	41.3	1.01	4.4	0.03	109.5	1.60
379.2	2.01	35.4	1.16	3.5	0.03	102.4	1.93
391.8	1.52	31.2	0.90	3.3	0.00	72.9	1.46
273.8	1.35	28.2	1.26	2.9	0.00	76.6	1.49
223.3	2.14	24.9	0.88	2.9	0.10	61.1	1.26
200.1	1.67	22.3	0.80	636.1	1.41	63.2	1.15
164.3	1.55	15.2	0.44	480.3	1.31	46.3	1.43
143.2	1.70	13.9	0.43	280.2	1.72	47.2	1.38
115.9	1.44	12.2	0.27	379.2	1.75	35.0	1.23
106.6	1.76	10.1	0.28	223.3	1.43	35.4	1.43
83.4	1.73	9.7	0.16	284.4	2.12		
70.8	1.33	8.2	0.20	188.7	1.90		
61.5	1.70	7.8	0.07	200.1	1.58		
51.8	1.36	6.4	0.11	132.7	1.48		

SAMPLE TEMPERATURE: 3.2 °C

	mg m^{-3}
CHLOROPHYLL:	1.25
CARBON:	-
NITROGEN:	-
PROTEIN:	31.40

INCUBATION TEMPERATURE: 4.0 °C

	mg m^{-3}
RNA:	4.75
DNA:	0.89
ATP:	0.596

INCUBATION TIME: 2 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.56
NITRATE:	-
SILICATE:	1.12
AMMONIA:	1.15

334.9	1.65	28.0	0.91	2.6	0.00	62.4	1.58
356.8	1.52	27.0	0.73	2.5	0.00	66.1	1.35
254.9	1.48	23.2	0.44	2.4	0.00	50.1	1.64
238.0	1.38	21.5	0.46	596.1	1.94	53.9	1.65
208.5	1.57	13.5	0.32	589.8	1.68	38.8	1.20
174.8	1.59	13.3	0.24	412.9	1.55	45.1	1.46
153.8	1.38	11.2	0.14	450.8	1.87	28.6	0.99
110.8	1.53	9.9	0.22	286.5	1.40	33.7	1.07
85.9	1.46	8.2	0.04	222.0	1.66		
63.2	1.22	8.0	0.12	267.5	1.81		
60.2	1.21	6.5	0.03	155.9	1.73		
53.9	1.36	6.1	0.02	163.9	1.40		
47.2	1.12	4.1	0.00	127.2	1.58		

SAMPLE TEMPERATURE: 2.8 °C

INCUBATION TEMPERATURE: 5.0 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}
CHLOROPHYLL:	1.00
CARBON:	-
NITROGEN:	-
PROTEIN:	30.00

	mg m^{-3}
RNA:	5.81
DNA:	1.46
ATP:	0.543

	mg at-m^{-3}
PHOSPHATE:	0.54
NITRATE:	-
SILICATE:	1.08
AMMONIA:	1.05

I	P	I	P	I	P	I	P
467.6	1.08	43.4	0.85	3.7	0.00	65.3	1.04
556.1	1.42	33.3	1.02	3.4	0.01	51.4	1.03
398.1	1.32	30.8	0.71	2.7	0.00	57.7	1.53
334.9	1.40	24.4	0.56	2.3	0.00	37.5	1.06
315.9	1.36	21.9	0.69	2.1	0.00	43.8	1.00
233.8	1.52	19.0	0.44	2.0	0.00	29.9	0.84
174.8	1.76	16.9	0.34	610.9	1.45	31.2	0.82
132.7	1.49	12.2	0.23	391.8	1.71		
112.9	1.54	10.5	0.23	501.3	1.27		
92.7	1.15	9.6	0.22	356.0	1.21		
83.0	1.75	8.6	0.15	219.1	1.40		
75.0	1.06	7.6	0.07	275.9	1.35		
60.7	1.07	6.7	0.07	174.8	1.40		
56.9	0.98	5.9	0.01	176.9	1.42		
45.1	0.86	5.8	0.00	130.6	1.43		

SAMPLE TEMPERATURE: 3.2°C INCUBATION TEMPERATURE: 5.2°C INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.12	RNA:	6.59	PHOSPHATE:	0.58
CARBON:	87.00	DNA:	2.06	NITRATE:	0.40
NITROGEN:	14.00	ATP:	0.677	SILICATE:	1.81
PROTEIN:	56.20			AMMONIA:	0.84

248.6	1.67	11.0	0.40	1.4	0.08	50.6	1.34
195.9	1.64	11.4	0.44	621.4	1.14	60.2	1.43
168.4	1.44	7.2	0.35	412.9	1.21	42.1	1.67
126.4	2.04	8.0	0.27	484.5	1.47	45.5	1.89
103.2	1.93	6.1	0.16	315.9	1.18	29.9	1.13
92.7	1.98	6.3	0.13	391.8	1.82	35.0	0.93
77.1	1.39	3.9	0.08	214.9	1.22		
69.5	1.99	4.0	0.08	311.8	1.74		
50.6	1.31	2.8	0.06	176.9	1.62		
40.0	1.65	2.5	0.05	210.6	1.62		
36.7	1.06	2.3	0.05	147.5	1.37		
29.4	0.96	2.0	0.04	86.4	1.44		

SAMPLE TEMPERATURE: 4.0 °C

INCUBATION TEMPERATURE: 4.9 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.06	RNA:	6.80	PHOSPHATE:	0.54
CARBON:	-	DNA:	1.92	NITRATE:	0.21
NITROGEN:	-	ATP:	0.678	SILICATE:	1.76
PROTEIN:	42.80			AMMONIA:	0.60

I	P	I	P	I	P	I	P
526.6	1.44	28.2	0.90	2.5	0.00	67.4	1.46
351.8	1.54	23.6	0.69	2.3	0.00	48.4	1.62
256.9	1.47	21.5	0.73	2.0	0.00	53.9	1.17
214.9	1.38	14.3	0.46	1.9	0.01	36.7	1.48
168.5	1.66	12.6	0.46	589.8	0.91	43.4	1.11
147.5	1.50	10.4	0.26	442.4	1.17	27.4	0.93
126.4	1.83	9.7	0.30	282.3	1.37	31.2	1.07
96.1	1.48	8.0	0.17	351.8	1.26		
82.9	1.67	7.8	0.19	202.2	1.80		
77.1	1.44	6.3	0.23	126.4	1.83		
64.5	1.23	6.3	0.14	185.4	1.32		
46.3	1.62	4.6	0.02	120.1	1.79		
35.4	1.09	4.2	0.05	76.7	1.80		
35.0	1.28	3.4	0.00	88.0	1.48		
27.8	1.17	3.0	0.01	59.0	1.83		

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 5.2 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.51	RNA:	6.92	PHOSPHATE:	0.57
CARBON:	78.00	DNA:	2.10	NITRATE:	0.43
NITROGEN:	14.00	ATP:	0.752	SILICATE:	1.59
PROTEIN:	45.60			AMMONIA:	1.22

337.0	2.09	28.6	1.13	2.1	0.00	61.1	2.22
288.6	2.53	28.2	1.16	1.5	0.00	70.8	1.91
214.9	2.06	21.9	1.00	1.7	0.00	47.2	2.42
206.4	2.04	20.6	1.07	1.0	0.02	53.9	1.63
160.1	2.00	13.0	0.58	1.1	0.00	40.0	1.51
136.9	1.73	12.0	0.24	615.1	2.78	40.9	1.85
126.4	2.10	6.6	0.47	431.8	1.80	29.9	1.24
87.6	2.08	6.1	0.31	269.6	2.69	31.2	1.01
80.0	2.37	5.7	0.38	347.6	1.90		
67.4	2.45	5.9	0.22	200.1	2.50		
62.4	2.14	4.2	0.16	174.8	2.82		
51.8	1.87	4.0	0.16	105.3	2.31		

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 5.5 °C

INCUBATION TIME: 2 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.36	RNA:	6.10	PHOSPHATE:	0.56
CARBON:	142.00	DNA:	2.62	NITRATE:	0.43
NITROGEN:	14.00	ATP:	0.617	SILICATE:	3.52
PROTEIN:	40.50			AMMONIA:	0.60

I	P	I	P	I	P	I	P
564.5	2.74	4.8	0.10				
480.3	3.30	4.0	0.13				
315.9	2.91	3.0	0.13				
249.4	2.91						
117.5	2.64						
91.0	2.72						
61.5	2.09						
52.2	2.82						
39.6	1.60						
30.3	2.33						
22.8	0.80						
15.6	0.57						
12.6	0.43						
9.4	0.34						
6.5	0.21						

SAMPLE TEMPERATURE: 3.5 °C

INCUBATION TEMPERATURE: 6.0 °C

INCUBATION TIME: 0.5 HRS.

	$mg\ m^{-3}$		$mg\ m^{-3}$		$mg\ at\text{-}m^{-3}$
CHLOROPHYLL:	0.86	RNA:	6.75	PHOSPHATE:	0.57
CARBON:	-	DNA:	2.38	NITRATE:	0.36
NITROGEN:	-	ATP:	0.752	SILICATE:	2.70
PROTEIN:	37.80			AMMONIA:	1.64

[illegible]	[illegible]
156.7	2.78
113.3	2.43
85.9	2.76
71.2	2.42
42.1	1.65
27.4	1.34
20.2	0.59
12.6	0.43
9.5	0.27
7.6	0.27
6.1	0.07
4.2	0.02

SAMPLE TEMPERATURE: 3.5 °C

	mg m^{-3}
CHLOROPHYLL:	0.86
CARBON:	-
NITROGEN:	-
PROTEIN:	37.80

INCUBATION TEMPERATURE: 6.0 °C

	mg m^{-3}
RNA:	6.75
DNA:	2.38
ATP:	0.752

INCUBATION TIME: 1 HRS.

	mg at-m^{-3}
PHOSPHATE:	0.57
NITRATE:	0.36
SILICATE:	2.70
AMMONIA:	1.64

I	P	I	P	I	P	I	P
309.7	3.08	2.5	0.01				
191.7	2.09						
166.4	2.01						
130.6	2.42						
83.4	2.07						
60.7	1.83						
49.3	1.80						
37.1	1.77						
27.0	1.72						
22.8	0.97						
10.0	0.63						
8.5	0.40						
5.9	0.15						
3.5	0.08						
3.2	0.35						

SAMPLE TEMPERATURE: 3.5 °C

INCUBATION TEMPERATURE: 6.0 °C

INCUBATION TIME: 2.0 HRS.

	mg m^{-3}
CHLOROPHYLL:	0.86
CARBON:	-
NITROGEN:	-
PROTEIN:	37.80

	mg m^{-3}
RNA:	6.75
DNA:	2.38
ATP:	0.752

	mg at-m^{-3}
PHOSPHATE:	0.57
NITRATE:	0.36
SILICATE:	2.70
AMMONIA:	1.64

[illegible]	[illegible]	[illegible]	[illegible]
269.6	1.98	2.8	0.03
179.1	1.86		
126.4	2.48		
91.8	2.33		
67.4	2.03		
47.6	1.57		
35.8	1.45		
27.4	1.31		
21.9	0.86		
14.3	0.85		
10.3	0.44		
8.6	0.35		

SAMPLE TEMPERATURE: 3.5 °C

INCUBATION TEMPERATURE: 6.0 °C

INCUBATION TIME: 4.0 HRS.

	mg m^{-3}
CHLOROPHYLL:	0.86
CARBON:	-
NITROGEN:	-
PROTEIN:	37.80

	mg m^{-3}
RNA:	6.75
DNA:	2.38
ATP:	0.752

	mg at-m^{-3}
PHOSPHATE:	0.57
NITRATE:	0.36
SILICATE:	2.70
AMMONIA:	1.64

I	P	I	P	I	P	I	P
568.7	3.10	5.3	0.27				
383.4	3.26	3.1	0.15				
244.4	2.48	2.4	0.13				
188.7	2.73	2.0	0.04				
126.4	2.93						
98.6	3.19						
71.6	2.80						
52.7	1.93						
40.0	1.52						
28.6	1.42						
21.5	1.18						
16.9	0.79						
11.8	0.79						
8.8	0.44						
7.2	0.26						

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 6.0 °C

INCUBATION TIME: 0.5 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.05	RNA:	5.68	PHOSPHATE:	0.56
CARBON:	11.00	DNA:	1.37	NITRATE:	0.24
NITROGEN:	71.00	ATP:	0.683	SILICATE:	2.24
PROTEIN:	36.40			AMMONIA:	2.05

421.3	2.22	2.32	0.02
305.4	2.34		
147.0	2.17		
70.8	2.00		
50.1	1.74		
37.9	1.53		
29.1	1.02		
21.9	1.01		
16.9	0.56		
11.4	0.45		
8.6	0.32		
7.0	0.19		
5.5	0.04		
3.8	0.06		

SAMPLE TEMPERATURE: 3.8°C

	$mg\ m^{-3}$
CHLOROPHYLL:	1.05
CARBON:	11.00
NITROGEN:	71.00
PROTEIN:	36.40

INCUBATION TEMPERATURE: 6.0 °C

	$mg\ m^{-3}$
RNA:	5.68
DNA:	1.37
ATP:	0.683

INCUBATION TIME: 1.0 HRS.

	$mg\ at\text{-}m^{-3}$
PHOSPHATE:	0.56
NITRATE:	0.24
SILICATE:	2.24
AMMONIA:	2.05

I	P	I	P	I	P	I	P
619.3	3.64	2.9	0.06				
349.7	3.52	2.4	0.05				
149.6	2.43						
99.8	2.09						
73.7	2.77						
55.6	1.85						
50.1	1.64						
32.9	1.49						
27.4	0.68						
19.0	1.14						
12.2	0.69						
9.5	0.34						
7.2	0.23						
5.8	0.21						
4.0	0.07						

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 6.0 °C

INCUBATION TIME: 2.0 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.05	RNA:	5.68	PHOSPHATE:	0.56
CARBON:	11.00	DNA:	1.37	NITRATE:	0.24
NITROGEN:	71.00	ATP:	0.683	SILICATE:	2.24
PROTEIN:	36.40			AMMONIA:	2.05

476.0	1.67	3.2	0.02
318.1	1.93	2.4	0.0
242.2	2.50		
170.6	2.33		
80.0	1.94		
56.9	1.94		
48.9	1.70		
38.8	1.81		
27.0	1.22		
21.0	0.82		
12.6	0.53		
10.1	0.33		
7.4	0.26		
5.7	0.09		

SAMPLE TEMPERATURE: 3.8 °C

INCUBATION TEMPERATURE: 6.0 °C

INCUBATION TIME: 4.0 HRS.

	mg m^{-3}		mg m^{-3}		mg at-m^{-3}
CHLOROPHYLL:	1.05	RNA:	5.68	PHOSPHATE:	0.56
CARBON:	11.00	DNA:	1.37	NITRATE:	0.24
NITROGEN:	71.00	ATP:	0.683	SILICATE:	2.24
PROTEIN:	36.40			AMMONIA:	2.05

I	P	I	P	I	P	I	P
589.8	1.65	47.2	2.06	4.7	0.08	141.1	2.36
610.9	1.75	38.3	1.76	4.5	0.08	164.3	1.91
484.5	1.81	35.4	1.84	3.2	0.08	94.8	1.85
383.4	2.57	32.9	1.62	3.2	0.04	88.1	2.27
345.5	1.96	27.0	1.49	2.6	0.03	49.7	2.46
299.1	1.91	22.8	1.48	2.7	0.04	63.2	1.96
254.9	2.46	20.2	1.20	2.0	0.01	40.0	1.66
212.8	2.06	15.2	0.80	2.3	0.00	48.5	1.94
179.1	1.91	13.5	0.75	621.4	2.02	33.3	1.26
160.1	2.67	11.2	0.62	589.8	1.60	38.3	1.46
107.4	2.59	9.1	0.47	379.2	2.56	24.0	1.18
103.2	2.05	9.1	0.39	463.4	1.78	26.5	1.11
82.1	2.35	8.0	0.28	275.9	2.37		
72.5	1.92	7.1	0.26	353.9	2.46		
49.7	2.04	6.5	0.26	193.8	2.20		

SAMPLE TEMPERATURE: 3.2 °C

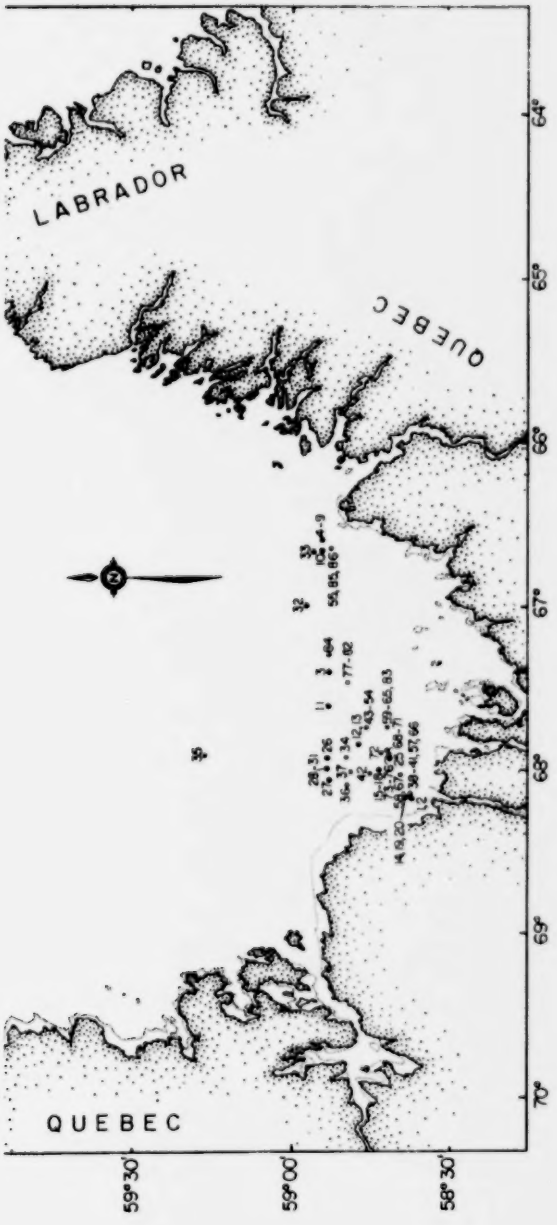
INCUBATION TEMPERATURE: 6.1 °C

INCUBATION TIME: 4 HRS.

	mg m^{-3}
CHLOROPHYLL:	0.98
CARBON:	62.00
NITROGEN:	10.00
PROTEIN:	42.50

	mg m^{-3}
RNA:	4.08
DNA:	2.06
ATP:	0.456

	mg at-m^{-3}
PHOSPHATE:	0.53
NITRATE:	0.40
SILICATE:	1.70
AMMONIA:	0.92



ampling stations in Ungava Bay.